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1974
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VICTORIA

FIFTY-SECOND REPORT

OF THE



COMMISSION OF PUBLIC HEALTH

FOR THE

YEAR ENDED 30TH JUNE, 1974

PRESENTED TO BOTH HOUSES OF PARLIAMENT PURSUANT TO SECTION 23 (3)
OF THE HEALTH ACT 1958

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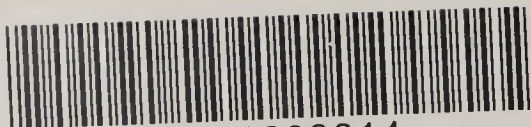
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FIFTY-SECOND REPORT OF THE COMMISSION OF PUBLIC HEALTH 1973-74



To the Honorable Alan Henry Scanlan, M.L.A.

SIR,

We have the honour to submit, in accordance with Section 23 (3) of the *Health Act* 1958, our report for the year ended 30th June, 1974.

In the report for 1972-73 the Commission reiterated previous recommendations that fluoridation of public water supplies was a safe and effective measure to assist in the prevention of dental caries in the community and noted with satisfaction the coming into operation of the *Health (Fluoridation) Act* 1973. We now look forward to a significant reduction in dental caries in the children of this State as fluoridated water supplies become more general.

The Commission has a continuing responsibility under this legislation with regard to the extension and supervision of fluoridated water supplies throughout the State which will involve the appointment of a number of specialist officers to the Department.

MURRAY VALLEY ENCEPHALITIS.

Early in January, 1974, a four-year-old boy from a northern Victorian town was admitted to Fairfield Hospital suffering from an acute febrile illness associated with spasticity and fits. This admission was the forerunner of an epidemic of Murray Valley Encephalitis (MVE) which reached a peak in February and subsided, insofar as Victoria was concerned, in April.

Of the patients infected in Victoria, 24 were admitted to Fairfield Hospital and the remaining 5 to other hospitals in the State. The ages ranged from 3 to 74 and all of them acquired their illness north of the Great Dividing Range. Six deaths occurred and a number of those surviving will have varying degrees of neurological impairment which cannot at this stage be fully assessed. The lower case fatality rate compared with that in 1951 when 42 per cent. died is probably a reflection of modern methods of patient care including respiratory treatment at Fairfield Hospital.

Early in the epidemic the Commission issued warnings and distributed pamphlets on measures to control mosquito breeding at the domestic level and personal protection measures against biting from these vectors. Three research teams from the Australian National University, School of Public Health and Tropical Medicine, University of Sydney, and the Department of Agriculture of Victoria, respectively, co-ordinated by the Chief Health Officer carried out intensive field studies in the Murray Valley collecting mosquitoes for virus isolations and blood specimens from animals, birds and domestic fowls. Officers of the Commission obtained blood specimens from a number of persons in northern Victoria with a view to detecting the presence of MVE antibodies. The major finding to come out of these investigations was the isolation of MVE virus from *Culex annulirostris* mosquitoes which is the first time this has been achieved during an actual epidemic in this country. The virus had been isolated previously from this species of mosquito in Queensland during an inter-epidemic period. *Culex annulirostris* is dispersed over a wide area of northern Victoria and vector control measures pose a logistics problem of some magnitude.

The Department of Agriculture set up "sentinel chickens" at three strategic positions along the Murray Valley which were regularly bled and tested for MVE virus antibodies. Unfortunately this early warning indicator was a disappointment insofar as the chickens only showed sero-conversion well after the epidemic commenced. It is possible that more detailed analysis of meteorological and ornithological data will provide a more sensitive prediction of epidemic risk.

Apart from the medical and social effects of this epidemic the economic loss from tourism in northern Victoria was quite profound. As the distribution of the disease was more widespread than the Murray Valley area, affecting every mainland State and Northern Territory and accounting for over 60 cases with 10 deaths on a national basis, representations were made to have the name changed in keeping with the geographical distribution. The Commission resolved to request the National Health and Medical Research Council to consider a name change to Australian B Encephalitis. However the Council decided that Australian Arbo Encephalitis was a more appropriate title and this proposal has been placed before the World Health Organisation.

EPIDEMIOLOGICAL AND INFECTIOUS DISEASES REPORT.

TUBERCULOSIS.

Introduction and Review.

Tuberculosis control and facilities used in Victoria since 1964 have been fairly uniform. As shown in Table 1 the tuberculosis notifications have progressively declined each year during this period, but with smaller reductions during the past 4 years. The overall decline since 1970 was 52 cases with only a drop of 2 cases in the last year. The decline from 820 notifications in 1964 to 421 cases in 1970 is 399 cases—an average mean decline of 57 cases annually compared with an average of only 13 cases annually since 1970.

TABLE 1.

Year.					Active Cases.				
					New.	Rate per 100,000.	Reactivated.	Chronic.	Total.
1964	..	..	..	..	820	25.93	72	86	978
1965	..	..	..	..	790	24.50	84	66	940
1966	..	..	..	..	649	19.98	78	59	786
1967	..	..	..	..	599	18.13	80	49	728
1968	..	..	..	..	535	15.94	57	38	630
1969	..	..	..	..	497	14.50	44	38	579
1970	..	..	..	..	421	12.11	61	33	515
1971	..	..	..	..	416	11.78	23	19	458
1972	..	..	..	..	371	10.42	42	15	428
1973	..	..	..	..	369	10.25	38	10	417

Similar experience is common to Australian States and countries overseas where tuberculosis incidence is reduced to low levels, even when active programmes against tuberculosis are maintained.

Present knowledge of the epidemiology of tuberculosis accepts that the original infection by the tuberculosis organism can result in the development of clinical tuberculosis very many years later, and especially in those persons who have not received chemotherapy in adequate courses. This does not ignore the probability of the influence of new re-infection at times also being a contributing factor, but together, these factors point to a need for a continuing effective service aimed against tuberculosis in our community.

Last year, there were 369 new cases of tuberculosis notified, a rate of 10.25 per 100,000 population. In addition there were 38 reactivations and 10 persons with chronic active tuberculosis. In all there was an active tuberculosis case load of 417 cases. Most of these were excreting tuberculosis organisms, so no one would claim that tuberculosis has been controlled in this State.

Risk Groups.

There were 172 new notifications from persons born outside Australia, i.e., 46.6 per cent. of the total new cases. The 1971 census figure for migrants living in Victoria is shown as 22.8 per cent. of the population. This means that the rate of active tuberculosis reported amongst those born outside Australia is more than double that of Australian born. This occurs despite good pre-migration screenings. The reasons are not difficult to postulate as most migrants come from areas where tuberculosis is far more common than here, and many have been infected by tuberculosis before arriving—tuberculin testing of primary school children showed a rate of 4.6 times that of Australian born (B.C.G. Division report 1971).

Amongst new arrivals there are many stresses and anxieties, and sometimes a tendency towards overcrowding can increase risk of cross infection, especially among children.

The present pre-migration screening, coupled with the compulsory signing of “undertakings” by those migrants who show evidence of increased risk of tuberculosis to report to the State Tuberculosis Services for medical supervision on arrival, proves a most rewarding procedure for the individual, and is good public health. Last year 18 persons were found to have active tuberculosis within one year of arrival and 49 more within 5 years. This programme works well, but has to overcome difficulties in communication overseas and locally, and language barriers. Frequent movement of these groups results in a tremendous amount of time and work, but failure to maintain medical supervision can result in increased risk for the community.

Two other risk groups are now well recognised; the older adults, especially men, and the “alcohol” groups. The importance of these groups can be seen from 1973 experience, e.g., 50 per cent. of all new pulmonary cases were aged 50 years and over; a chest x-ray survey of three “hostels” for “unpredictable males” resulted in the discovery of six active infectious cases of tuberculosis out of the 138 persons x-rayed; and of the Australian-born adult male patients receiving treatment in sanatorium usually almost half are “heavy drinkers of alcohol”.

With the lessening of pulmonary tuberculosis, other forms become more prominent and reached 20·9 per cent. of the new notifications last year. Tuberculosis in young children is still a problem, and 11·4 per cent. of the new cases were children under 15 years. Most of these children are born outside Australia or are first generation Australian.

Tuberculin testing of school children indicates that overall infection amongst children and younger adults is very low—2·1 per cent. natural positive reactors at age 14 years. As many young people are now travelling overseas to countries with higher tuberculosis problems, the present programme of B.C.G. vaccination should continue.

The future tuberculosis position will depend on reducing infection and clinical disease of those large numbers in our community who as yet are uninfected, and as at least part of the slowing down of the present notification rate is associated with the increasing migrant population in Victoria, it is reasonable to expect that future case loads will almost certainly be closely influenced by immigration policies.

Mass X-Ray Surveys.

In October, 1973 the third compulsory chest x-ray survey for adults 21 years and over was completed in all areas throughout Victoria. The earlier compulsory surveys commenced in October 1963 and 1967. Attendances in all surveys were good and after roll checking and follow-up, figures were maintained at about 97–98 per cent. for the areas checked. However, it is evident that attendance on survey has gradually dropped, requiring follow-up of greater numbers to maintain the high final figure. The lowest rates are in the third survey in the metropolitan area, where figures for attendance at the caravans on survey were as low as 60–70 per cent. This certainly reinforces previous experience with voluntary surveys, where attendances became quite unacceptable when assessed as an effective case finding method. As the Deputy Director of Tuberculosis (Radiology) stated in his retiring comments “compulsion” with “effective roll checking” is essential with mass chest x-rays, if the intended purpose is to be achieved.

The three completed surveys in the 10 years from October, 1963 to October, 1973 have demonstrated the effectiveness of this method, and also indicate the reduced amount of tuberculosis in the community now compared with 10 years ago. The marked decrease in active cases found with each survey is very striking—987, 504 and 325.

	<i>1st Survey</i>	<i>2nd Survey</i>	<i>3rd Survey</i>	<i>Total.</i>
	1963–1967.	1967–1970.	1970–1973.	
Active Cases ..	987	504	325	1,816

In the 3 surveys 1,816 cases of active tuberculosis have been discovered, of whom 75·3 per cent. were found to be excreting tubercle bacilli, i.e., infectious to others. In the main, these people were unaware of having ill-health, nor suspected tuberculosis, so that the diagnosis was established earlier than awaiting symptoms. This must have reduced infection in the community considerably.

In addition to the active cases of tuberculosis 13,500 persons who had radiological evidence of significant past tuberculous infections were brought to medical surveillance at clinics or by private doctors. This group of the population are known to carry a considerably higher risk of developing active tuberculosis than the community generally and so are asked to continue their reviews.

Probably the most striking result of the surveys was the discovery of so much active tuberculosis amongst the older members of the community and persons in remote areas, groups of people who did not attend voluntary surveys regularly or not at all. This had been indicated in the pilot studies carried out in Essendon and Coburg in 1962.

Another impact of the Mass X-ray Surveys visits to all areas was the catalytic effect upon the medical profession. It became recognised to expect an upsurge of tuberculosis notifications in most areas during the 6 months prior to the visit of the caravans. With the phasing down of mass x-ray surveys the loss of this effect may prove to be important, for now it is uncommon for doctors in general practice to see many cases of tuberculosis. Unless tuberculosis is remembered delays in diagnosis may occur and permit further risk of spread of infection.

In addition to tuberculosis many other chest abnormalities have been brought to attention. In all 25,000 significant non-tuberculosis conditions were reported from these surveys. This included 1,700 cases of cancer in the lung and 520 cases of sarcoidosis. If the management of pulmonary cancer becomes more effective, the earlier discovery made possible by chest x-ray on a regular basis for persons known to have increased risk of this condition, may find a place in a mass x-ray survey programme. For instance in 1973, 244 persons with probable lung cancer were detected.

Compulsory chest x-rays are continuing, but the regular pattern used in previous surveys to visit all areas in the State serially has been changed. Now areas known from past experience to have higher incidence of tuberculosis are being given priority over areas where tuberculosis prevalence is lower. It is also considered reasonable to reduce the number of x-ray caravans being used in the field. This will result in longer intervals between x-ray surveys in most areas, and also allow some economies.

This reduced activity of mass x-ray surveys will throw a greater responsibility on the doctors in private practice and public hospitals as about a third of the new pulmonary cases have been brought to attention by this means in recent years.

Trends in Notifications. Chart "A".

In 1968 an analysis was made of the annual incidence of active tuberculosis cases notified for the years 1962–68. This indicated that the decline in cases was confined almost entirely to the group of Australian born who develop pulmonary tuberculosis. Tuberculosis occurring in those born outside Australia and in extra-pulmonary forms remained relatively unchanged during the period.

Continuing the analysis through to 1973, Chart "A" shows that previous trends continue. However, comparative incidence rates for the groups for the census years 1966 and 1971 show changes, viz. :—

Total notifications	..	20·2 — 11·9	per 100,000 population		
Pulmonary	..	17·7 — 9·8		Non-Pulmonary	.. 2·4 — 2·1
Australian born	..	18·2 — 8·9		Migrants	.. 27·5 — 21·8
British born	..	33·4 — 11·8		Non-British	.. 24·3 — 26·9

Notification Rates : Table "B" : Chart "B".

For the analysis, the "key" years 1956, 1961, 1966 and 1971 were taken to obtain population figures from census returns, and the case load from the mean of the "key" year and its adjacent two years. Rates are given on Table "B". Chart "B" shows the pulmonary forms.

The case incidence increases with advancing age, but by the "key" year 1971, all age groups achieve a decline. Over the period analysed, 1956–1971, however, the pattern has varied in the different groups. In the "under 15 years" there has been a steady limited decline, whereas the decline in the groups between "15–64 years" is very marked, and occurred earlier in the groups "15–34 years". The groups "over 55 years" produce a different pattern from the others, with a lag or actual increase in rates between 1961 and 1966. This probably reflects the results from the introduction of compulsory chest x-ray surveys upon groups of people known to have been reluctant to attend the voluntary x-ray surveys. However, the decline from 1966 to 1971 is much steeper.

Migrant Notifications : Table "C".

In 1967, an analysis was made of notifications of active tuberculosis occurring in Victoria in persons born outside Australia, using the mean incidence for the years 1965–66–67, and population figures derived from the 1966 census. This has now been repeated for the years 1970–71–72, and using the 1971 census figures. The rates are set out in Table "C".

In general, the rates of tuberculosis are considerably higher than in Australian born, viz. : 1 : 11,320 compared with 1 : 4,860 for migrants. Holland gives a rate about the same as Australia ; U.K., and Ireland, Germany and Malta have rates, though greater, are much lower than most of the other countries mentioned. Greece, Yugoslavia, Poland, India and Turkey have high rates.

Further, in the 1966 analysis, the rate of active tuberculosis reported within one year of arrival was 1 : 1,900. In 1971, this rate is 1 : 1,280, and on actual cases, the mean rate for the years analysed is 24 compared with 31 now. In subsequent years after arrival the rates are unchanged, "1–4 years" at 1 : 3,400, but improved in later years to 1 : 5,940.

Bearing in mind that in 1973 almost half of the new notifications of active tuberculosis came from persons born outside Australia, the above analysis points to high risk areas in this group and indicates that a considerable amount of our effort in maintaining high standards of tuberculosis control must continue to be directed towards pre-migration screening and close medical surveillance of those known to be at greater risk after arrival, and especially in the first five years. Certain countries of origin probably need greater care.

Notifications.

During 1973 there were 369 new cases of tuberculosis notified, a rate of 10·25 per cent. per 100,000. Of these 292 (79·1 per cent.) were pulmonary cases and 77 (20·9 per cent.) were extra-pulmonary. Seventy-eight per cent. of all cases were bacteriologically proven, pulmonary (80 per cent.) and extra-pulmonary (67 per cent.). There were 234 males (63 per cent.) and 135 females (37 per cent.).

Bovine type myco-bacteria were isolated from one patient—an aboriginal from N.S.W. with advanced pulmonary tuberculosis.

There were 5 new cases reported from whom atypical myco-bacteria were isolated.

Age Groups.

The age distribution is fairly even amongst adults over 35 years. The figure for children under 15 years is 11 per cent. of the total.

30 per cent. of all new cases were 60 years and over.

73 per cent. of all new cases were 35 years and over.

55 per cent. of all new pulmonary cases were males 35 years and over.

50 per cent. of all new pulmonary cases were 50 years and over.

Migrants.

Forty-six point six per cent. of the year's notifications were from persons born outside Australia, i.e., 172 cases. The 1971 census figure is 22.8 per cent. of the Victorian population. Thirty-seven persons were British and 135 non-British. Eighteen persons (11 per cent.) were reported within one year of arrival (17 non-British); of the 77 extra-pulmonary cases reported 38 were born outside Australia and two were British.

Extra-Pulmonary Tuberculosis.

There were 77 cases reported. Tuberculosis of the renal and genital organs continues to be the most common—38 cases. There were 11 cases of bone and joint tuberculosis and 5 cases of meningitis. Tuberculosis of lymph glands is still fairly common and usually occurs in children; 18 cases were reported; some of these are due to atypical myco-bacterial infection.

Source of Notification.

Mass x-ray surveys were responsible for 86 cases (29.4 per cent.) of the pulmonary forms. Hospitals were credited with 95 (26 per cent.) of the total and private medical practitioners were responsible for 70 (19 per cent.). State Clinics reported 88 cases (24 per cent.). There were eight notifications from death certificates.

The routine survey of inmates on entry to Pentridge has revealed no new cases during the year. Two cases resulted from screening Mental Hospital patients and one by Schools B.C.G. Division.

Reactivation.

There were 38 persons previously notified whose tuberculosis again became active after at least three years of stability. Thirty-three were bacteriologically proven at relapse. Pulmonary relapse occurred in 31 cases and extra-pulmonary in seven. Almost half the cases (18) had been stable for 15 years or longer, 15 had no previous chemotherapy and 14 had chemotherapy for less than 2 years. Only nine on review were considered to have had satisfactory courses of chemotherapy.

In addition, there were seven cases whose lesions again became active after periods of stability from 1 to 3 years.

Case Register.

On 31st December, 1973, the Case Register for active cases had 1,909 cases, of whom 1,658 had pulmonary and 251 had extra-pulmonary disease. Five hundred and sixty-nine names were removed from the Register during the year. About 1,000 patients were receiving chemotherapy.

The Case Register continues to be an important adjunct to tuberculosis control, especially aiding supervision of persons changing their places of living, and those who carry a higher risk of relapse, or risk to others if they relapse (e.g. kindergarten workers, school teachers, etc.). Special lists of names of such people are kept to enable closer supervision.

Appreciation is again acknowledged for the co-operation of the staffs of the Bacteriological Laboratory at the Fairfield Hospital and the Repatriation Department and to many private medical practitioners who supply information in this important work.

"Chronic Positive" Cases.

A record is maintained of patients who are known to have had active disease with positive bacteriological examinations for twelve months or longer. Names are not removed until negative tests are obtained for a year. At 31st December, 1973, there were 10 "Chronic positive" cases, including Repatriation cases, 5 less than at December, 1972. Two persons are excreting anonymous-type myco-bacteria. Two new names were added to the list during the year.

Deaths.

The figure supplied by the Commonwealth Bureau of Statistics for deaths is not yet available. Records of those having died during the year included only 16 persons who had had evidence of active tuberculosis at death or within the previous six months. The average age at death was 67·6 years.

Tuberculosis Allowances.

At 31st December, 1973, there were 80 persons being paid the Tuberculosis Allowance, compared with 127 at the end of 1972. Of these persons 53 were men and 27 were women, 39 were receiving in-patient care and 41 were out-patients. There were 72 (94·5 per cent.) in receipt of the Allowance for less than one year, 5 between one and two years, and 3 over two years. The average duration of payment of the allowance was 5·4 months for those receiving it for less than a year, and of the 244 cancelled during the year 164 returned to work, 55 transferred to other Social Service Benefits, 4 were for disciplinary reasons and the others for various reasons.

The Tuberculosis Allowance is a special allowance payable through the Commonwealth Department of Social Security and is primarily intended to encourage and enable those with active and infectious or potentially infectious tuberculosis to cease work and accept treatment.

Mass X-Ray Surveys.

The third compulsory x-ray for all adults 21 years and over was completed in October, 1973. Nineteen electorates were surveyed in 1973 and 598,721 miniature x-rays were taken. There were 81 persons with active tuberculosis discovered—a rate of 0·14 per 1,000 x-rays, 244 cases of cancer in the lung, a rate of 0·41 per 1,000 x-rays, and 54 cases of sarcoid—a rate of 0·09 per 1,000.

Technical faults from the caravan units were recorded at a rate of 1·67 per 1,000 films. The recall rate from 70 mm films was 4·0 per 1,000.

Doctors' referrals.

For persons referred by doctors to the Division of Chest X-ray Surveys for x-ray examination 90 showed pulmonary abnormalities and four were found to have active tuberculosis and 14 considered to have significant inactive lesions.

Tuberculin Testing—B.C.G. Vaccination.

Tuberculin testing, using C.S.L., P.P.D., has continued in schools with pupils above Grade 6, i.e., 12 years old and above. B.C.G. vaccination is offered to the negative reactors. The present programme permits visiting all areas of the State every three years and consent rates for pupils last year were 95 per cent. In all 87,495 pupils were examined over the year yielding a positive reactor rate of 2·0 per cent. Twenty-five thousand and twenty-two pupils had been vaccinated in earlier years and of these 80·2 per cent. have positive tuberculin reactions.

Rates for school children.

Age 12 years	16,335 tested	1·5 per cent. natural reactors :	1972	2·4 per cent.
Age 13 years	17,127 tested	1·8 per cent. natural reactors :	1972	2·8 per cent.
Age 14 years	15,982 tested	2·1 per cent. natural reactors :	1972	3·2 per cent.

Post B.C.G. re-examinations.

All ages and groups—

(3/12 to 12 years after vaccination) 3,283 tested—90 per cent. plus ve : 1972 84 per cent.

Contacts and others—

(3/12 after vaccination) 1,029 tested—95 per cent. plus ve : 1973 94 per cent.

In addition “all age” surveys of primary school children were carried out in two city municipalities ; Hawthorn and Preston, and Hamilton in the country. The consent rate was over 95 per cent. Eleven thousand, eight hundred and eighty-five pupils were tested and the natural reactor rate was 0·96 per cent.

Surveys have also been made of various other groups, including 3 contact surveys in schools—in all 90,561 were examined and 55,768 vaccinations performed during the year.

Bacteriology.

Reliable bacteriological support is essential in tuberculosis detection and control. Appreciation is again expressed for the co-operation and help given by the staff of the Tuberculosis Laboratory at Fairfield Hospital.

As in 1972 this year's report does not include isolations from cultures carrying over into 1974.

During the year the Laboratory's work resulted in :—

15,492 direct smear examinations

15,945 cultural examinations

230 animal inoculations

2,597 sensitivity tests

Isolations of tubercle bacilli were detected from 322 patients of whom 267 were new cases, 25 were "carry over" cases from the end of 1972, 26 were from reactivated cases, and 4 were from persons with chronically active tuberculosis.

Sensitivity tests included all new patients, relapses and reactivations against streptomycin, isoniazid, P.A.S., ethambutol and rifampicin. No cases of primary resistance to ethambutol or rifampicin were detected.

Primary Resistance.

There were 13 cases of primary resistance detected, 10 were from migrants. In the past 10 years there have been 102 cases of primary resistance detected and 64 of these persons were born outside of Australia.

Bovine type.

One isolation was identified during the year.

Treatment.

With the availability of effective chemotherapy the present problems in treatment lie not so much in making patients non-infectious soon after diagnosis, as ensuring that full courses of appropriate chemotherapy are taken to reduce the risk of future relapse.

Mental Hospital patients in Victoria who suffer from tuberculosis are concentrated in a ward at Mont Park Mental Hospital for treatment. These constitute a special group as they are virtually the only patients for whom completely supervised chemotherapy is given for 18 months or longer, and who have bacteriological examinations of sputum or F.G.C. throughout the whole of this period. As might be expected, a review of 100 primary isolations between 1961 and 1970 shows a conversion rate of 100 per cent. with two reactivations, these being represented by the finding of a single positive culture only; one at two years, and one after five years completion of treatment, and with no associated radiological or clinical deterioration. These constitute a yard-stick against which other treatment routine can be evaluated.

Happily for other patients, the standard routine of an average of 4 months hospital treatment with mostly unsupervised out-patient treatment subsequently, produce a similar result initially, but a number of relapses occur during the outpatient management period in all groups studied. It is difficult to estimate cumulative reactivation rates amongst patients treated in previous years, but the number occurring each year suggests a higher rate than in the mental hospital patients.

A review of 37 "reactivations" from 1972 showed that 15 have had no chemotherapy, 19 have had less than 18 months or irregular chemotherapy, and only 3 could reasonably be assumed to have had 18 months or longer continuous chemotherapy. This would suggest that intensive clinic follow-up of patients who have had adequate chemotherapy is unnecessary, as has been suggested from many overseas publications in recent times. However, as at this stage it is just not known who fits into this category, apart from the small number of supervised patients, no change in current follow-up activities is practicable unless treatment schedules are changed in the direction of more intensive supervision of outpatients.

It is of interest to note that 30 of these reactivations were actually detected at routine follow-up sessions, but 10 of them had symptoms for some time and many were detected by other agencies.

Institutions.

Of the 340 beds listed to us throughout Victoria, many are being used for other purposes, but are available if and when required. However, at Heatherton Sanatorium there continue to be unoccupied beds over the predictable requirements. It is expected some of these unoccupied beds will be used for other purposes during 1974.

TABLE " A ".
COMPULSORY MASS X-RAY SURVEYS—VICTORIA.

					1st Survey 1963-67.	2nd Survey 1967-70.	3rd Survey 1970-73.
Persons X-rayed	..	..	..	..	2,094,793	2,032,692	1,998,301
Active Cases	..	..	..	..	987	504	325
Rate per 1,000	..	..	..	..	0·47 per 1,000	0·25 per 1,000	0·16 per 1,000
Stage :							
Minimal	..	..	..	..	34·5%	46·4%	39·4%
Moderate	..	..	..	..	47·0%	38·7%	47·4%
Advanced	..	..	..	..	18·5%	14·9%	13·2%
Bacteriologically Positive	..	..	..	..	74·9%	76·8%	73·5%
Sex :							
Male	..	..	..	..	733-74·3%	374-74·2%	250-76·9%
Female	..	..	..	..	254-25·7%	130-25·8%	75-23·1%
Age :							
Under 35 years	..	..	..	..	149	96	49
Rate	..	..	..	..	0·215 per 1,000	0·13 per 1,000	0·065 per 1,000
35-49 years	..	..	..	..	295	129	102
Rate	..	..	..	..	0·46 per 1,000	0·22 per 1,000	0·18 per 1,000
50 years and over	..	..	..	..	543	279	174
Rate	..	..	..	..	0·72 per 1,000	0·40 per 1,000	0·25 per 1,000

Age Groups (Years).					1st Survey.		2nd Survey.		3rd Survey.	
					Active Cases.	Rate per 1,000.	Active Cases.	Rate per 1,000.	Active Cases.	Rate per 1,000.
Under 20	..	..	..	..	23	0·22	10	0·075	7	0·07
20-24	..	..	..	..	37	0·20	32	0·14	8	0·03
25-29	..	..	..	..	37	0·18	26	0·13	18	0·08
30-34	..	..	..	..	52	0·27	28	0·145	16	0·08
35-39	..	..	..	..	85	0·43	36	0·19	31	0·06
40-44	..	..	..	..	102	0·46	43	0·21	30	0·16
45-49	..	..	..	..	108	0·48	50	0·26	41	0·21
50-54	..	..	..	..	104	0·57	55	0·33	40	0·25
55-59	..	..	..	..	116	0·68	63	0·42	37	0·26
60-64	..	..	..	..	99	0·72	53	0·43	35	0·28
65-69	..	..	..	..	83	0·70	45	0·415	25	0·27
70 and over	..	..	..	..	141	0·94	63	0·42	37	0·23
Total	..	..	..	..	987	0·47	504	0·25	325	0·16

CHART "A".
NEW TUBERCULOSIS NOTIFICATIONS
1962 - 1973

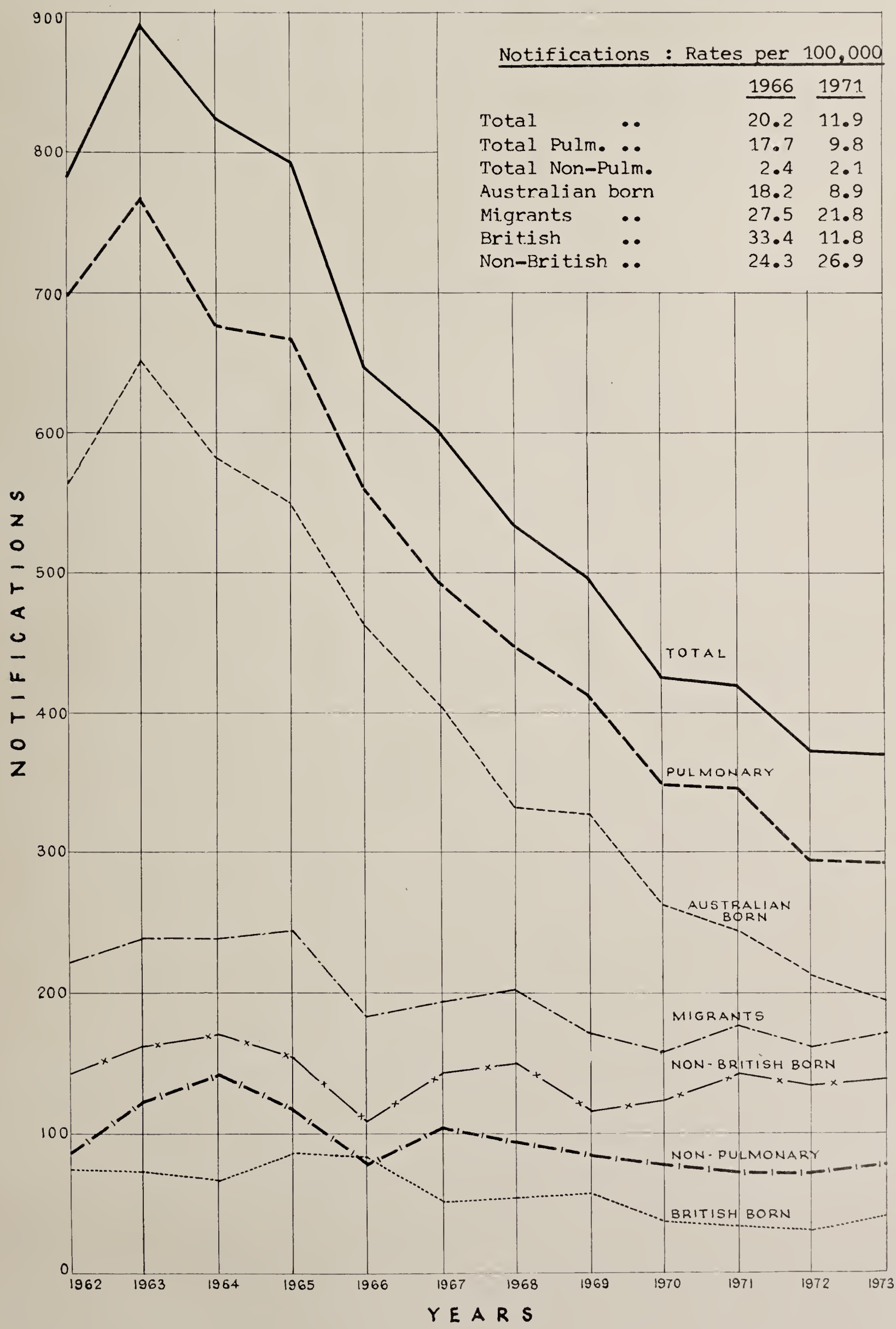


TABLE “ B ”.

TUBERCULOSIS NOTIFICATIONS RATE PER 100,000 OF POPULATION 1956-1971.
Rates represent mean notifications for three year period (one year either side).

Age Groups.	Pulmonary.				Non-Pulmonary.				Total Notifications.			
	1956.	1961.	1966.	1971.	1956.	1961.	1966.	1971.	1956.	1961.	1966.	1971.
0-14 ..	7.45	6.33	4.86	2.70	1.97	3.85	1.59	0.85	9.42	10.18	6.45	3.55
15-24 ..	33.04	14.72	8.46	5.09	2.22	3.22	1.90	0.93	35.26	17.94	10.36	6.02
25-34 ..	42.99	24.65	14.19	8.03	3.48	4.71	4.86	2.66	46.47	29.36	19.05	10.69
35-44 ..	42.53	31.49	22.34	12.49	1.74	4.27	5.22	4.01	44.27	35.76	27.56	16.50
45-54 ..	46.39	40.80	28.84	14.64	1.34	2.74	3.76	3.28	47.73	43.54	32.60	17.92
55-64 ..	51.65	39.17	37.01	17.86	1.29	2.84	3.65	2.53	52.94	42.01	40.66	20.39
65 and over ..	38.38	38.84	46.21	23.73	1.34	2.11	3.01	2.81	39.72	40.95	49.22	26.54

PULMONARY NOTIFICATIONS—CHANGE IN RATES.

Age Groups.				1956-1961.	1961-1966.	1966-1971.	1956-1971.
0-14				- 1.12	- 1.47	- 2.16	- 4.75
15-24				-18.32	- 6.26	- 3.37	-27.95
25-34				-18.34	-10.46	- 6.16	-34.96
35-44				-11.04	- 9.15	- 9.85	-30.04
45-54				- 5.59	-11.96	-14.20	-31.75
55-64				-12.48	- 2.16	-19.15	-33.79
65 and over				+ 0.46	+ 7.37	-22.48	-14.65

CHART "B".

PULMONARY TUBERCULOSIS NOTIFICATIONS
RATE PER 100,000
IN AGE GROUPS FOR 1956 TO 1971

(NOTIFICATION RATE = MEAN FOR YEAR SPECIFIED AND YEAR BEFORE & AFTER)

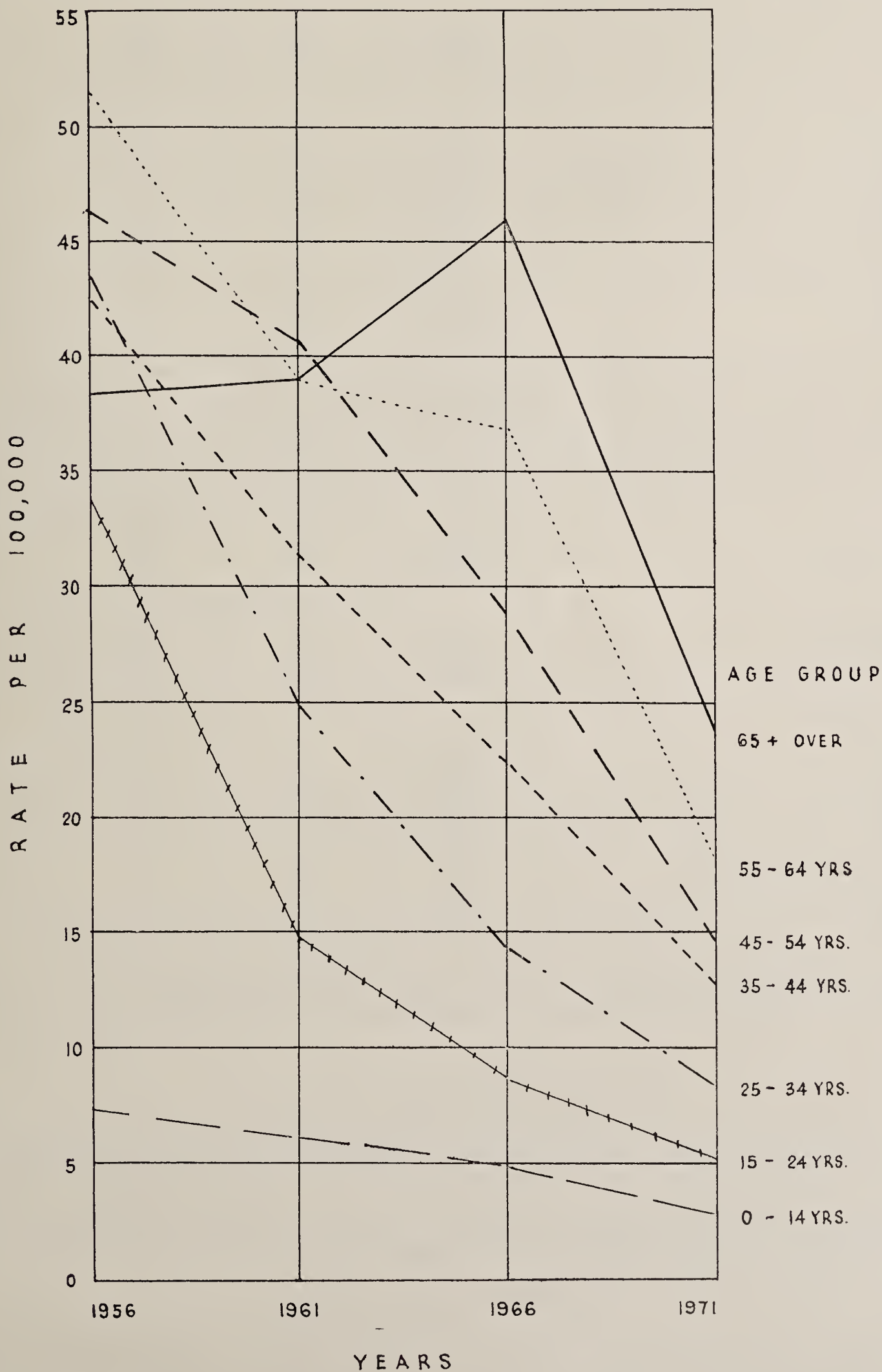


TABLE "C".
TUBERCULOSIS IN MIGRANTS, VICTORIA.
YEARS 1965, 1966, 1967.

—	*Population.	Total Notifications.	Yearly Average.	Rate.
Victoria	3,219,526	2,038	679	1 = 4,740
Australian Born	2,538,928	1,419	473	1 = 5,370
Non-Australian Born.. .. .	680,598	619	206	1 = 3,300
<i>Period of Residence—</i>				
Within one year	45,687	72	24	1 = 1,900
1-4 years	128,740	118	39	1 = 3,300
5 years and over	491,587	429	143	1 = 3,440
<i>Country of Birth—</i>				
Greece	64,275	67	22.3	1 = 2,880
Holland	34,646	13	4.3	1 = 8,060
Italy	111,219	113	37.6	1 = 2,960
Yugoslavia	24,634	47	15.6	1 = 1,580
Poland	24,697	30	10	1 = 2,470
Malta	26,452	12	4	1 = 6,610
Germany	37,270	15	5	1 = 7,450
United Kingdom and Ireland	239,406	192	64	1 = 3,740
India	3,643	6	2	1 = 1,820
Turkey	970	3	1	1 = 970
Australia	2,538,928	1,419	473	1 = 5,370

YEARS 1970, 1971, 1972.

—	φPopulation.	Total Notifications.	Yearly Average.	Rate.
Victoria	3,502,351	1,208	403	1 = 8,690
Australian Born	2,704,629	716	239	1 = 11,320
Non-Australian Born	797,722	492	164	1 = 4,860
<i>Period of Residence—</i>				
Within one year	39,741	93	31	1 = 1,280
1-4 years	139,558	122	41	1 = 3,400
5 years and over	546,058	277	92	1 = 5,940
<i>Country of Birth—</i>				
Greece	79,048	75	25	1 = 3,160
Holland	33,939	9	3	1 = 11,310
Italy	121,758	63	21	1 = 5,800
Yugoslavia	49,756	50	16.6	1 = 3,000
Poland	23,639	24	8	1 = 2,950
Malta	25,787	10	3.3	1 = 7,810
Germany	36,699	13	4.3	1 = 8,530
United Kingdom and Ireland	270,571	93	31	1 = 8,730
India	8,166	7	2.3	1 = 3,550
Turkey	5,381	21	7	1 = 770
Australia	2,704,629	716	239	1 = 11,320

* Calculated on Census Figures—30th June, 1966.

φ Calculated on Census Figures—30th June, 1971.

* At 30.6.66—21.14 per cent. of Victorian population was born outside Australia. The above countries represent 17.49 per cent. of population.

φ At 30.6.71—22.8 per cent. of Victorian population was born outside Australia. The above countries represent 18.69 per cent. of the population.

INFECTIOUS HEPATITIS (Syn. Hepatitis A).

The downward trend in incidence since 1970 has continued. Notifications were 993 as compared with 1,226 in 1972. All age groups were affected, the preponderance being in the young. There were 7 deaths registered for the State most of these being elderly people. Several small outbreaks were recorded in a State Mental Institution where hygiene standards are difficult to maintain due to the class of inmate. Otherwise the disease was spread fairly evenly throughout the community with a slightly higher rate in country areas.

HEPATITIS B. (HBAG positive).

Most of the 79 notifications came from Fairfield Hospital. Of these 20 were attributed to drug abuse, 4 followed tattooing and 8 were associated with transfusions and surgery. One death was reported. It is anticipated that a wider screening of viral hepatitis patients for Hepatitis B antigen will yield a higher rate for the country areas which is at present less than 1 per 100,000 population as compared with 3 per 100,000 in the metropolitan area.

IMPORTED DISEASES.

The 44 malaria cases reported were all imported and due to *Plasmodium vivax*. Most were visitors to New Guinea who had taken regular chloroquin while there, but had failed to take a "curative" course on their return. Other diseases notified were 2 cases of amoebic dysentery imported from Indonesia and Bali, respectively ; 7 cases of Hansen's disease from the following countries, India (3), Vietnam, Lebanon, Spain and Malta ; and 3 cases of typhoid fever to be detailed below.

TYPHOID FEVER.

There were 7 cases and 1 carrier of typhoid infection notified representing 6 episodes namely :—

An 11-year-old boy developed an enteric fever. His 43-year-old mother gave a history of past typhoid fever in Italy and was proved to be a carrier.

A 47-year-old male developed his illness following his return from a tour of India.

A 38-year-old male became ill one week following a meal of mussels.

A 26-year-old trained nurse working in a hospital acquired a typical infection from a source that could not be determined. Subsequently an 18-year-old laboratory technician from the same hospital who had handled the cultures became infected.

An 11-year-old boy who had recently migrated from Aden via Bombay developed a mild infection.

A 17-year-old Lebanese girl developed symptoms 2 weeks after she had left Beirut.

DIPHTHERIA.

One case and one carrier, both part-aboriginal girls from the same household in a northern country town, were the only notifications. The case was a mild one with pharyngeal membrane and palatal paralysis. There was no history of immunisation. The carrier was discovered following routine swabbing of contacts. Both recovered fully and were discharged from Fairfield Hospital with negative throat swabs. It is expected that the Special Health Services Division by providing a better outreach system will help to improve the immunological status of certain ethnic groups in the community.

ZOOSES.

Notifications for these diseases were—

Brucellosis	..	..	..	..	..	..	..	17
Hydatidosis	..	..	..	..	..	..	..	4
Leptospirosis	..	..	..	..	..	..	..	6
Ornithosis	..	..	..	..	..	..	..	2
Q Fever	..	..	..	..	..	..	..	1

The cases of brucellosis comprised 10 acute and 7 chronic infections. The occupations for the former group were fairly typical comprising 2 laboratory workers, 2 dairy farmers, 1 grazier, 1 stockman, a meat works fitter, an S.E.C. linesman and a milk truck driver who drank raw milk.

The cases of hydatidosis occurred in adults from farming areas, a 34-year-old male and a 64-year-old female from the Western District and a 78-year-old male from the North East, the latter as a result of post mortem examination. The fourth had spent his childhood on a farm in Greece.

The cases of ornithosis were a 32-year-old bird fancier and a 19-year-old aviary keeper at a zoological gardens.

The leptospirosis cases were all dairy farmers and the serotypes were either Hardjo or Pomona, known to be prevalent in dairy herds at the present time.

The case of Q Fever was a 38-year-old meat worker from northern Victoria.

TETANUS.

The 4 cases notified included a late notification from 1972—a 63-year-old unimmunised woman with no apparent trauma who subsequently died. The three more recent cases were males aged 45, 59 and 65, respectively, all unimmunised, who contracted moderate to severe tetanus following soil contaminated hand injuries.

GASTRO-ENTERITIS.

The 70 notified cases of salmonellosis occurred mainly in the summer months and in the young and aged. *S. typhimurium* accounted for almost half of the infections. Fifteen shigella infections were notified, nearly all of which were in children. Thirteen cases of food poisoning

representing 4 outbreaks were reported. Investigations in 3 of these were inconsequential while in the fourth, faecal cultures in two of four people notified yielded *S. typhimurium*. A questionnaire survey on the 50 people attending the same party revealed that about 30 experienced minor illness following a meal where deep fried chicken was implicated. However, no bacteriological confirmation was obtained on the food nor was the source of the presumed contamination identified.

Among the non-notifiable forms of gastro-enteritis those due to pathogenic *E. coli* occurred during the summer months and were responsible for the admission of several infants to Fairfield Hospital for resuscitation following fluid loss.

The annual winter epidemic now thought by some Melbourne virologists to be possibly due to an Orbivirus, was smaller than those experienced in the last few years.

ENTEROVIRUS INFECTION.

The summer period of 1972-73 saw a milder than usual epidemic of enteroviral infections which is reflected in the number of cases of viral meningitis admitted to Fairfield Hospital. The predominant virus was ECHO virus type 9 with others less commonly identified being ECHO virus type 6 and Coxsackie B viruses. This epidemic waned in April.

The 1973-74 epidemic began in September and by early this year ECHO virus type 30 had become the most frequent isolate. Other virus types included ECHO virus types, 3, 5, 6, 7, 9, 18, and Coxsackie virus types A9, B3, B4. The epidemic was slower to decline than in former years.

RESPIRATORY VIRUS INFECTIONS.

The annual autumn epidemic of *M. parainfluenza* marked by an increase in the number of hospital admissions of young children with croup, was largely due to virus type 1. This was succeeded as usual by the annual epidemic of bronchiolitis due to Respiratory Syncytial Virus in babies. The outbreak of this disease characterised by cough and wheezing and in more severe cases bronchiolar obstruction, reached its peak in July and subsided in August.

The anticipated winter epidemic of influenza as a carry-over from the 1972 outbreak due to the new strain of influenza virus, Type A England 42/72, did not eventuate though a few isolations of the virus were made in late winter and spring. The strain of influenza type B circulating in epidemic proportions during winter showed considerable variation from that occurring previously but, nevertheless, the impact of this change was not as great as that found with new strains of influenza type A.

In the latter part of the year, parainfluenza virus type 3 and rhinoviruses were identified as causing a few cases of croup admitted to hospital and also "colds" and bronchitis.

The winter of 1974 saw the emergence of Port Chalmers type A, influenza, a variant of England 42/72 which showed a significant antigenic shift. At the time of preparing this report an epidemic of moderate severity had become manifest.

POLIOMYELITIS AND ALLIED DISEASES.

Incidence of Poliomyelitis.

No case of Poliomyelitis was reported during 1973.

Distribution of Sabin Vaccine. (Oral).

A total of 387,450 doses were issued during the year bringing the total number of doses now distributed throughout Victoria to 5,747,820.

After-care treatment.

Help in the form of orthopaedic supervision and physiotherapy services has been provided to patients who are still in need of this assistance.

Where appropriate, financial help in the purchase of splints when needed, has also been given. Full financial assistance is given to pensioners without further means test. These services are also provided for sufferers from Multiple Sclerosis or Polyneuritis on the same basis as Poliomyelitis patients.

Additional referrals to the Division in these categories during the year have been :—

Poliomyelitis	..	..	..	..	..	24
Multiple Sclerosis	..	..	..	..	..	45
Polyneuritis	..	..	..	..	..	7

Other Activities of the Division.

The physiotherapy staff has continued to provide assistance in Mental Health Centres at Larundel and Sunbury, and at the Janefield Special School, Bundoora.

Help in the form of physiotherapy has also been provided to children at the Allambie Reception Centre of the Social Welfare Department, and at Ante-Natal Clinics conducted by the Maternal and Child Welfare Branch.

IMMUNIZATION MATERIAL ISSUED TO MUNICIPALITIES 1973-74.
(with figures for 1972-73 for comparison).

Material.										Number of Doses.	
										1973-74.	1972-73.
Measles Vaccine	..	..	..	..	..	..	..	..	..	83,608	97,296
Rubella Vaccine	..	..	..	..	..	..	..	..	..	47,658	53,883
Sabin Vaccine	..	..	..	..	..	..	..	..	..	387,450	443,370
Triple Antigen	..	..	..	..	..	..	..	..	..	258,261	280,347
A.D.T.	..	..	..	..	..	..	..	..	..	50,983	57,216
Combined Diphtheria Tetanus Prophylactic	..	..	..	..	..	..	..	..	..	107,695	101,528
Purified Tetanus Toxoid (A.P.A.)	..	..	..	..	..	..	..	..	..	16,235	20,219
Smallpox Vaccination	..	..	..	..	..	..	..	..	..	26,079	25,109
Schick Test Toxin	..	..	..	..	..	..	..	..	..	800	800
Diphtheria Prophylactic (P.T.A.P.)	..	..	..	..	..	..	..	..	..	3,240	3,198

VENEREAL DISEASES.

Government Clinic.

TABLE I.—NEW PATIENTS AT THE GOVERNMENT CLINIC.

Year.			Patients.			Gonorrhoea.			Syphilis.		
			Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1964	..	..	2,288	644	2,932	678	227	905	28	1	29
1965	..	..	2,622	788	3,410	862	215	1,077	43	3	46
1966	..	..	2,699	919	3,618	814	314	1,128	29	3	32
1967	..	..	3,124	1,244	4,368	824	381	1,205	33	4	37
1968	..	..	3,015	1,201	4,216	734	335	1,069	40	5	45
1969	..	..	3,016	1,167	4,183	796	372	1,168	70	8	78
1970	..	..	3,329	1,546	4,875	952	721	1,673	38	4	42
1971	..	..	3,558	1,639	5,197	1,014	659	1,673	34	10	44
1972	..	..	4,309	2,095	6,404	1,009	832	1,841	38	8	46
1973	..	..	4,690	1,991	6,681	868	809	1,677	26	9	35

Table I indicates the attendance figures for new patients at the Government Clinic for the year, and for the previous nine years, including the number of patients diagnosed as suffering from syphilis and gonorrhoea.

TABLE II.—NEW PATIENTS AT THE GOVERNMENT CLINIC FOR THE FIRST SIX MONTHS OF 1973 AND 1974.

Year.			Patients.			Gonorrhoea.			Syphilis.		
			Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1973	..	..	2,409	1,069	3,478	438	384	822	13	4	17
1974	..	..	2,683	1,005	3,688	445	373	818	21	3	24

Table II. presents similar statistics for the past six months (January 1st to June 30th, 1974.)

These tables illustrate the continuing yearly increase in the number of patients attending the clinic for examination and treatment.

The female attendance continues to be high, mainly as the result of referral of female contacts of infected males through stringent application of contact tracing measures.

This is also reflected in the high incidence of gonorrhoea amongst these usually asymptomatic female patients, and the further approximation of the male to female ratio of positive cases up to almost 1 : 1 (868 : 809).

The fact that this ratio is still about 2 : 1 (170 : 84) in all other cases reported other than from the clinic suggests the need for encouragement and education of private practitioners in this particular field.

TABLE III.—VENEREAL DISEASES NOTIFICATIONS FOR VICTORIA.

Source.							Gonorrhoea.			Syphilis.		
							Male.	Female.	Total.	Male.	Female.	Total.
1973												
Government Clinic							868	809	1,677	26	9	35
Others—												
Metropolitan and Country							170	84	254	30	79	109
							1,038	893	1,931	56	88	144
1972							1,305	925	2,230	57	54	111
1971							1,345	734	2,079	61	38	99
1970							1,300	768	2,068	59	14	73
1969							1,175	450	1,625	97	54	151
1968							1,189	424	1,613	65	19	84
1967							1,361	485	1,846	59	33	92
1966							1,265	413	1,678	47	6	53
1965							1,264	322	1,586	66	19	85
1964							1,019	283	1,362	48	11	59

Figures in Table III. cover total notifications of cases of syphilis and gonorrhoea in the State of Victoria, with comparative figures for the previous nine years.

There was a moderate fall in the number of cases of gonorrhoea notified, and although this may be only of a temporary nature at least it is an encouraging sign.

There was a slight rise in the number of cases of syphilis, almost all on the female side, and they were reported mostly from major hospitals specialising in women's diseases.

Although the actual increase in these numbers is not very great, since syphilis can be a very dangerous disease, even a small rise in its incidence should be viewed with concern, and the medical profession as a whole be on the alert to detect and treat cases promptly.

TABLE IV.

FEMALES.							
Government Clinic.				Rest of Victoria.		Total.	
Age Groups.	Attendances.	Gonorrhoea.	Syphilis.	Gonorrhoea	Syphilis.	Gonorrhoea.	Syphilis
0-9	1	1	..	..	..	1	..
10-14	101	24	..	..	..	24	..
15-19	804	327	1	27	13	354	14
20-24	531	236	4	25	25	261	29
25-29	257	119	3	12	18	131	21
30-34	119	51	..	4	10	55	10
35-39	54	20	..	3	5	23	5
40-44	56	10	..	2	6	12	6
45-49	34	11	1	..	2	11	3
50+	34	10	..	..	..	10	..
				(?Age Group)		(Unspecified)	
	..	..	..	11	..	11	..
Total ..	1,991	809	9	84	79	893	88

TABLE V.

MALES.							
Government Clinic.				Rest of Victoria.		Total.	
Age Groups.	Attendances.	Gonorrhoea.	Syphilis.	Gonorrhoea.	Syphilis.	Gonorrhoea.	Syphilis.
15-19	858	176	1	27	..	203	1
20-24	1,730	355	4	57	8	412	12
25-29	900	184	7	46	6	230	13
30-34	445	68	4	12	8	80	12
35-39	282	38	4	10	3	48	7
40-44	190	35	1	3	5	38	6
45-49	125	5	1	3	..	8	1
50+	160	7	4	..	..	7	4
				(?Age Groups)		(Unspecified)	
				12	..	12	..
Total ..	4,690	868	26	170	30	1,038	56

The age and sex distribution of attendances and venereal disease as shown in tables IV. and V., when compared with those for the previous year, show only minimal changes which are of no significance.

TABLE VI.—ALL CASES OF SYPHILIS NOTIFIED 1972 AND 1973.

				Primary.		Secondary.		Early Latent.		Late Latent.	
				Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1972	..	..	..	18	15	9	8	27	28	3	3
1973	..	..	..	30	4	10	56	16	26	0	2

It can be seen from table VI. that there was an increase in the amount of infectious syphilis (primary and secondary cases) compared with other notifications, especially in the number of cases of secondary syphilis (56) in females whereas in the previous year (1972) the largest number of cases reported in females were of primary syphilis.

The important point is that this disease is still present in the community, in the infectious form.

TABLE VII.

Year				Venereal Disease in Victoria.				
				Attack Rate per 100,000 of Mean Population.				
				Total Population.	Gonorrhoea.		Syphilis.	
Number.	Rate per 100,000.	Number.	Rate per 100,000.					
1917	1,417,000	5,448	384·5	2,657	187·5
1918	1,437,235	5,076	353·2	2,135	148·5
1919	1,503,035	5,743	382·1	2,343	155·9
1927	1,741,832	4,601	264·2	918	52·7
1928	1,761,746	4,613	261·8	1,024	80·6
1929	1,778,269	4,584	257·8	659	37·1
1944	1,997,954	1,916	95·9	428	21·4
1945	2,015,107	2,302	114·2	421	20·9
1946	2,039,769	2,575	126·2	452	22·2
1954	2,477,986	467	18·85	133	5·4
1955	2,546,332	573	22·5	180	7·1
1956	2,618,112	651	24·9	128	4·9
1964	3,161,537	1,302	41·2	59	1·9
1965	3,233,938	1,586	49·0	85	2·6
1966	3,247,478	1,821	56·1	56	1·7
1967	3,323,400	1,772	50·3	106	3·19
1968	3,384,100	1,580	47·7	96	2·83
1971	3,496,161	2,079	59·4	99	2·8
1972	3,547,400	2,230	62·8	111	3·1
1973	3,600,000	1,931	53·0	144	4·0

Table VII. has been included to show the variations in the incidence of syphilis and gonorrhoea since 1917, based on the attack rate per 100,000 of the mean population.

The main points of interest are the striking fall in the indiccence of syphilis since 1917, coupled with a similar fall for gonorrhoea until 1954. Despite the advantages of modern management such as improved diagnostic procedures, effective forms of drug therapy, and application of new methods of venereal disease control including contact tracing and health education, the incidence has not fallen significantly since then.

OTHER ITEMS RELATING TO VENEREAL DISEASE MANAGEMENT.

1. *Venereal Diseases Survey.*

At the request of the Melbourne and Metropolitan Board of Works, a survey was carried out of the number of cases of venereal diseases seen at the Government Clinic according to their place residence.

This is part of an overall plan by the Board to detect areas where certain conditions are more prevalent, e.g. crime, accidents, delinquency etc., and venereal disease is only one of the subjects being investigated.

2. *Fairlea Women's Prison.*

Regular visits are still made to this institution for the examination of female prisoners. During the year a total of 239 prisoners were examined and 25 cases of gonorrhoea and 1 of syphilis were detected.

This is an improvement on the figures for 1972.

3. *Lymphogranuloma Venereum.*

Following claims by a medical practitioner writing in the Medical Journal of Australia, that Lymphogranuloma Venereum was a prevalent venereal disease in Australia, a survey was carried out by the Government Clinic with the co-operation of Dr. I. Gust of Fairfield Infectious Disease Hospital.

Blood for a complement fixation test was taken over a period of about six months from approximately 700 patients, which included both sexes, and particularly from those groups considered most likely to have been in contact with the disease (if it were indeed prevalent in the community).

Some of these groups tested were prisoners from Fairlea, prostitutes, homosexuals, overseas travellers, and all whose symptomatology or examinations were clinically suggestive.

Evaluation of the results is still being carried out, but preliminary findings suggest that no large scale infection rate will be detected.

4. *Syphilis and Homosexuality.*

A study of patients with the infectious stages of syphilis in males (primary and secondary), showed that approximately 80 per cent. of these cases acquired their infection as the result of homosexual contact.

5. *Education for Medical Students.*

In an effort to improve the standard of management of patients with venereal disease by the medical profession as a whole, the Clinic provides teaching facilities for medical undergraduates.

These consist of lectures and clinical demonstrations for the fifth year Monash medical students.

This is in addition to other lectures given by the staff to medical and nursing personnel.

6. *Research.*

One of the greatest problems encountered at the Government Clinic is the difficulty in arriving at an accurate diagnosis of gonorrhoea in a female patient. Examinations of smears frequently appear positive, but subsequent cultures prove negative, and the correlation between these two methods of diagnosis is poor, despite close co-operation between the Clinic and the Diagnostic Unit at the University of Melbourne.

In an effort to overcome this problem, some research is being done to try and perfect a fluorescent technique on smears from female patients. Preliminary results have been encouraging, despite the opposition to this scheme by most venereal disease laboratories who claim it is impracticable.

Hopes of a reliable serological test for gonorrhoea have faded and with no improvement in cultural methods for the delicate gonococcus, fluorescent microscopy appears to be the only sensible line of research to follow.

Building Maintenance.

During the year major renovations to the appearance and appointments of the clinic has been carried out, with both interior and exterior painting of the building, new carpets, furniture and equipment installed (including a new incubator), which should result in a raising of the status of the Clinic and improved morale of both staff and patients alike.

VENEREAL DISEASES (MALES) ATTENDING GOVERNMENT CLINIC 1973.

Project.					Non-Venereal Lesions Plus No Abnormality Detected.	Gonorrhoea.	Syphilis.	Admissions.
Sector.	Municipality.							
CENTRAL	Melbourne	396	83	3	482			
	Port Melbourne	158	42	10	210			
	South Melbourne	99	34	..	133			
	Richmond	105	31	2	138			
	Collingwood	58	20	1	79			
	Fitzroy	208	65	1	274			
	Total 1,316	1,024	275	17	1,316			
WESTERN	Williamstown	43	3	..	46			
	Footscray	181	44	3	228			
	Altona	22	6	..	28			
	Werribee	2	..	..	2	
	Sunshine	48	5	..	53			
	Melton	1	..	..	1	
	Total 358	297	58	3	358			
NORTHERN	Essendon	175	38	1	214			
	Brunswick	120	39	1	160			
	Northcote	106	34	1	141			
	Coburg	85	19	1	105			
	Preston	189	50	4	243			
	Keilor	30	12	..	42			
	Broadmeadows	21	3	..	24			
	Whittlesea	1	1	..	2			
	Bulla	1	..	..	1	
	Total 932	728	196	8	932			
EASTERN	Heidelberg	88	24	..	112			
	Diamond Valley	27	5	..	32			
	Eltham	19	5	..	24			
	Kew	44	8	1	53			
	Hawthorn	126	26	3	155			
	Campberwell	91	10	..	101			
	Doncaster and Templestowe	34	2	..	36			
	Box Hill	48	8	..	56			
	Nunawading	44	8	..	52			
	Ringwood	14	..	..	14	
	Croydon	17	3	1	21			
	Lillydale	18	6	..	24			
	Sherbrooke	6	2	..	8			
	Knox	24	..	..	24	
	Healesville	1	..	..	1	
	Total 713	601	107	5	713			
	SOUTHERN	St. Kilda	345	82	5	432		
		Prahran	227	64	..	291		
		Malvern	84	24	1	109		
Caulfield		113	20	1	134			
Brighton		45	12	..	57			
Sandringham		44	9	..	53			
Mordialloc		24	5	..	29			
Chelsea		22	5	..	27			
Frankston		25	3	..	28			
Oakleigh		54	6	1	61			
Moorabbin		45	8	..	53			
Waverley		30	4	..	34			
Dandenong		17	6	..	23			
Springvale		26	4	..	30			
Berwick		4	..	..	4	
Cranbourne		4	..	..	4	
Hastings		1	..	..	1	
Mornington		1	..	..	1	
Flinders .. ..		..	..	..	..
Total 1,371		1,111	252	8	1,371			

METROPOLITAN TOTAL 4,690

EXOTIC DISEASES UNIT—FAIRFIELD.

At the 31st December, 1973, when the Victorian population was 3,615,700 persons (est.) there were 31 persons being treated for Hansen's Disease (7 in-patients and 24 out-patients). None of these acquired the disease in Victoria.

The following table shows the sex, nationality and source of infection of these patients :—

In-patients.		Out-patients.		Nationality.	Source of Infection.
Male.	Female.	Male.	Female.		
1	..	6	1	Maltese	Malta
3	..	3	2	Anglo-Indian	India
..	1	Indian	India
..	..	2	..	English	India
..	..	1	1	Italian	Italy
..	1	Greek	Greece
..	1	Greek	Egypt
..	..	1	1	Ceylonese	Ceylon
..	..	1	..	Seychelles Islander	Seychelles Islands
1	Spanish	Spain
1	Lebanese	Lebanon
1	Australian	Palestine or Syria*
..	..	1	..	Australian	Borneo*
..	..	1	..	Australian	Vietnam*
7	..	16	8		

* War Service

Out-patients receive regular medical examinations and supplies of drugs.

The Hospital is available to accept persons found to be suffering from other exotic diseases requiring complete isolation.

MICROBIOLOGICAL DIAGNOSTIC UNIT.

Enteric Organisms.

(a) Typhoid.

Eight new cases of typhoid occurred in Victoria in 1973 and one new carrier was found.

An 11-year-old boy was infected by his mother who had had typhoid 20 years previously in Italy.

A 26-year-old nurse in the infectious disease ward of a country hospital contracted typhoid. Cultural screening of all patients who had been in the ward for the previous 3–4 weeks failed to reveal a carrier. Two weeks later the same phage type of *S. typhi* was isolated from blood culture of an 18-year-old laboratory technician who had handled the original culture.

Of the other cases 3 had contracted their typhoid overseas. One man had visited India prior to onset of the disease, a 12-year-old Indian boy had just arrived in Australia from India and the third was a seaman on a freighter. No carrier was found for the other two cases.

Five cases were reported from New South Wales, one from South Australia and one from Queensland. Three of the New South Wales cases were the same phage type and all had recently returned from visiting S. E. Asia. One other case from New South Wales was from a boy from Noumea while the Queensland case had just returned from S. E. Asia.

In all 128 cultures were phage typed. Of these 70 cultures came from Tonga and 34 from the Philippines.

(b) Paratyphoid.

Nine cultures of *S. paratyphi B.* were phage typed. Five cultures were isolated from sewage in South Australia, while the remaining cultures were isolated from one patient each in Victoria, New South Wales, Queensland and the Australian Capital Territory. The Victorian culture was isolated from sero-sanguinous fluid from an abdominal wound.

(c) Other Salmonellae.

Eight hundred and thirty-five cultures were serotyped in 1973. Of these 508 were from human cases in Victoria and 234 were isolated from a variety of non-human sources mainly egg pulp, water and meat meal. The other 93 cultures were from inter-state. *S. typhimurium* was again the predominant serotype accounting for 55 per cent. of total strains (58 per cent. of human cases). *S. infantis*, *S. Bovis-morbificans*, and *S. newport* were the next most common serotypes. It was the first time the unit had isolated *S. infantis* from human cases in Victoria. It was the second most common serotype in egg pulp and was also isolated from water and sewage effluent in country areas.

Thirteen new serotypes were seen for the first time in Victoria in 1973 viz : *S. agona*, *S. brandenburg*, *S. infantis*, *S. kalina*, *S. kentucky*, *S. lexington*, *S. livingstone*, *S. manhattan*, *S. ohlstadt*, *S. panama*, *S. schwarzengrund*, *S. welikade* and *S. zanzibar*. Altogether 46 serotypes were identified. There were no institutional outbreaks due to *Salmonella* in 1973.

(d) *Shigellae*.

Seventy-five strains of *Shigella* from Victoria were examined by the laboratory. *Sh. sonnei* (52 per cent.) was again the most common species isolated followed by *Sh. flexneri* 2A (33 per cent.).

Most of the isolates came from sporadic cases but there was one small outbreak of *Sh. sonnei* in a babies home involving 4 children and 2 nurses, while in Allambie 3 children were involved. Nine of the 25 isolates of *Sh. flexneri* 2A came from the Swan Hill district.

Sh. sonnei was isolated from a gorilla at the Melbourne Zoo.

Two hundred and thirty-three *Shigella* cultures were received from interstate in the laboratory's capacity as *Shigella* Reference Laboratory. One hundred and forty-one strains of *Sh. sonnei* were received from South Australia for colicine typing. Eighty-one isolates of *Shigella* were received from Queensland and 11 from New South Wales.

The Victorian strains of *Sh. sonnei* were predominantly Colicine type 2 or type 0, those from South Australia were mainly type 4 or type 0 while those from Queensland were mainly type 0.

(e) *Enteropathogenic E. coli*.

Fifty-five strains were examined. Most were from sporadic cases with the exception of one outbreak of *E. coli* 0111 K58 (B4) in a Child Minding Centre. The causative organism was isolated from 16 out of 46 children examined. One child was also excreting *S. adelaide*. All 15 adults examined were negative.

(f) *Cholera*.

All faeces received from people with diarrhoea who have recently returned from overseas are now routinely screened for *V. cholerae*. No isolates have been made in 1973 although a variety of non-cholera vibrios have been isolated together with various *Salmonella* serotypes.

Diphtheria.

Two cases were isolated during 1973. A child from a country town was admitted to the Royal Children's Hospital where a toxigenic strain of *C. diphtheriae* mitis type was isolated. Sixty six contacts were examined and found to be negative.

In December a child died at the Royal Children's Hospital. Post-mortem specimens examined at Fairfield Infectious Diseases Hospital gave a toxigenic strain of *C. diphtheriae* type mitis which was identified by this laboratory. All 91 contacts examined were negative for *C. diphtheriae*.

Thirty-three cultures of *C. diphtheriae* were received for diphthericin typing. Of these 26 were identified as *C. diphtheriae*.

Gonorrhoea.

Ten thousand seven hundred and ninety-five swabs were cultured for *N. gonorrhoeae*. Of these 9,314 were sent by the Government Clinic while the remaining 1,481 swabs were sent by General Practitioners or the Student Health Service from the three Melbourne Universities. In this latter group, 1,155 smears were examined and of these 55 (5 per cent.) were positive and of the 1,481 swabs examined 58 (4 per cent.) were positive. Twenty-one patients were positive on both smear and culture. From the Government Clinic 528 swabs were positive (6 per cent.). These came from 256 patients. From female patients 36 per cent. of positive cultures were isolated from urethral, cervical and anal swabs.

Using the minimum inhibitory concentration method all isolates were tested for their sensitivity to Penicillin, Tetracycline and Spectinomycin.

Water Microbiology.

There have been more requests this year for water examinations than in previous years.

In September a survey began for the Westernport Bay Environmental Study Group on the creeks and drains emptying into Westernport Bay. The water samples have been examined by the usual methods, but in addition, levels of faecal Streptococci have been estimated by a membrane filtration technique with cultivation on Slantetz and Bartley medium at 44°C.

Monthly surveillance has continued on waters from Frankston.

Examination for the presence of *Salmonella* spp. has been carried out on most waters submitted. Twenty-two isolations were made yielding 11 different serotypes. On two occasions more than one serotype was isolated from the one source. *S. infantis* was isolated on 3 separate occasions from Toolern Creek and *S. derby* and *S. anatum* were isolated on another occasion.

Food Microbiology.

Experience has shown that food poisoning cannot always be proven from food samples alone and that specimens from the affected patients are required as well. As usual examinations were not always satisfactory due to this problem and often because the food sample submitted was not the same batch as that suspected of causing the food poisoning. Specimens from patients as well as food were submitted from only 9 of the 31 food poisoning incidents examined.

Nevertheless, throughout the year a large variety of foods including fish, oysters, sausages and other cold meats, bean shoots, fried rice and other Chinese food ingredients, tins of soup, asparagus, sauces, milk, lemonade and other beverages have been examined and yielded interesting results.

High bacterial counts were found in the sausages and various cold meats but no pathogenic organisms were isolated.

During the summer months there were several episodes of food poisoning caused by "take-away" Chinese fried rice. From the cooked rice and other ingredients *Bacillus cereus* was isolated, with regularity, in large numbers and was thought to be the causative organism. Specimens from patients were submitted on only 2 occasions and *B. cereus* was grown from faeces once and from vomitus on another occasion.

The restaurants concerned in these outbreaks were advised by the Health Department to clean their kitchens thoroughly but outbreaks will continue to occur until the methods of preparation and storage of cooked rice are changed. On request these strains were submitted to Dr. Betty Hobbs at the Food Hygiene Laboratory, at Colindale, U.K., for examination of their toxin production.

Regular monitoring of fresh oysters continued with the co-operation of the Melbourne City Council. As in previous years the quality has been reasonable with the occasional batch not meeting U.K. or U.S.A. criteria. *Vibrio parahaemolyticus* (considered a major food poisoning organism in parts of the world where raw fish is eaten) was isolated from 3 different batches throughout the year.

Lengthy investigations were carried out on "blown" cans of asparagus. The asparagus was imported in a frozen state from Taiwan and canned in Australia. Organisms were seen by direct microscopy but failed to grow on conventional media. Toxicity tests in mice proved negative. Success finally came by preparing a medium from the asparagus itself. The isolate, a gram positive, pleomorphic bacillus resembling a member of the Propion O bacterium species, caused normal cans to blow. This organism would not normally be expected to survive an adequate heat treatment process and survival was probably due to the asparagus still being frozen and containing ice at the beginning of the canning process.

General.

Following reports of widespread gastroenteritis in Robinvale in June the laboratory examined 24 faeces from 19 patients. All but one were children under 4. No bacterial pathogens were isolated but electron microscopy examination of 7 frozen specimens later in the year by Dr. Ian Holmes of the Microbiology School, Melbourne University, revealed the presence of particles resembling orbivirus in 5 specimens (see *Medical Journal of Australia* (1974) Vol. 1, No. 23, p. 941).

Ten water samples from the reticulated supply were examined and all had low total counts and were negative for *E. coli*. Of the 3 drain samples examined 2 had very high *E. coli* and total counts but the third sample had low *E. coli* and total counts.

In the course of a survey of suspected *N. meningitidis* carriers among children and staff at a children's reception centre, 194 throat swabs were examined. Neisseria spp. were isolated from 31 patients but none were identified as *N. meningitidis*. However, 19 of the strains were identified as *N. lactamicus*, a newly named species.

Following a report of the isolation of 2 suspected typhoid cases from the crew of an oil tanker in Perth, blood cultures, faecal and urine cultures and Widal agglutinations were carried out on the 31 crew members after their arrival in Melbourne. Some crew members gave raised Widal titres but the only pathogenic organism isolated was *Sh. sonnei* colicine type 7 from 2 members of the crew. Later it was reported that the 2 patients taken off in Perth were infected with Salmonella serotypes other than *S. typhi*.

MICROBIOLOGICAL DIAGNOSTIC UNIT.

ANNUAL EXAMINATIONS.

A Comparison of Numbers for Calendar Years 1972 and 1973.

Examinations.								1972.	1973.
1. <i>Upper Respiratory Tract Infections</i> —									
(a) <i>Diphtheriae</i> —									
(i) Cultural examinations	..	..	..	..	..	..	..	2,438	2,368
(ii) Isolations and Identifications	..	..	..	..	..	..	..	10	33
(b) <i>Haemolytic Streptococci</i> —									
(i) Cultural examinations	..	..	..	..	..	..	..	2,438	2,368
(ii) Groupings	..	..	..	..	..	..	..	181	89
(iii) Antistreptolysin titre tests	..	..	..	..	..	..	..	133	95
2. <i>Enteric Infections (Salmonella and Shigella)</i> —									
(i) Cultural examinations	..	..	..	..	..	..	..	3,834	2,531
(ii) Identifications	..	..	..	..	..	..	..	1,835	1,508
(iii) Bacteriophage typing (<i>S. typhi</i> , <i>S. paratyphi</i> B., <i>S. typhimurium</i>)	..	..	..	..	..	..	..	1,681	1,932
(iv) Widal agglutination	..	..	..	..	..	..	..	1,185	925
3. <i>Serological Investigations</i> —									
(a) <i>Brucella</i>	..	..	..	..	..	..	..	883	627
(b) <i>Glandular Fever</i>	..	..	..	..	..	..	..	33	81
(c) <i>Leptospirosis</i>	..	..	..	..	..	..	..	247	361
(d) <i>Typhus Fever</i>	..	..	..	..	..	..	..	21	35
(e) <i>Rubella</i>	..	..	..	..	..	..	..	1,205	1,146
(f) <i>Others</i>	..	..	..	..	..	..	..	4	82
4. <i>General Bacteriological Examinations</i> including endogenous infections, food poisoning outbreaks, microbiological examination of food, milk, etc.—									
(i) Cultures	..	..	..	..	..	..	..	2,167	2,645
(ii) Drug sensitivities	..	..	..	..	..	..	..	1,802	1,740
5. <i>N. gonorrhoeae and related infections</i> —									
(a) <i>N. gonorrhoeae</i> —									
(i) Smears	..	..	..	..	..	..	..	495	1,155
(ii) Cultural examinations	..	..	..	..	..	..	..	8,077	10,795
6. <i>Medical Mycology (Microscopy and Cultures)</i>								102	148
7. <i>Water examinations</i>								522	611
8. <i>Parasitological examinations</i>								153	97
Totals	..	..	..	..	..	..	..	29,446	31,372

HEALTH LABORATORY.

General.

During 1973 a record number of samples were examined and total passed 3,000 for the first time. In addition, over 4,300 analyses were undertaken in the laboratory on about 400 samples of water by the staff of the Westernport Study Group.

Senior staff were again occupied to a considerable extent in advisory activities. Over 1,000 technical inquiries from companies and individuals were handled, and the Senior Chemist addressed the International Course on Food Technology conducted by the Commonwealth Department of Labour, the Victorian Hospitals Catering Guild and the Health Inspectors' Refresher Courses held at various centres. Senior government and company officials from a number of African, Asian and Pacific countries participated in the international course and visited the Laboratory while in Melbourne.

A major acquisition of equipment was the new gas chromatograph, equipped with flame photometric and Coulson conductivity detectors, which enabled phosphorus, sulphur and nitrogen compounds to be determined selectively.

Chemists of the division assisted in a number of inspections and prosecutions during the year.

Meat and Meat Products.

The situation remained fairly static, although there was a noticeable increase in the proportion of sausage meat and tripe samples which did not meet requirements. This group continues to be the area in which most contraventions are detected, about 9 per cent. of those submitted being below the legal standards.

One sample of sausage contained only 62 per cent. meat, the statutory minimum being 75 per cent., and two others had a fat content of 42 per cent., well above the permitted 27 per cent. Sulphur dioxide was present to an extent of 23 grains per pound in a sample of minced steak, a product in which this additive is prohibited.

A sample of a product sold as "chicken rissoles" contained no chicken whatsoever.

One meat pie sample contained only 17 per cent. meat, the regulatory minimum being 25 per cent.

TABLE 1.—SUMMARY OF MEAT RESULTS.

Type.	Number Examined.	Number not Complying.	Percentage not complying in—		
			1973-74.	1972-73.	1971-72.
Meat—					
Fresh	202	2	1	2	3
Chopped	242	26	11	9	8
Corned	5	0	0	0	0
Manufactured	103	7	7	7	3
Canned	0	0	0	0	17
Sausages and Sausage Meat	270	34	13	9	10
Tripe	7	2	29	13	0
Meat Pies	27	5	18	17	28
Total Meat Product Samples ..	856	75	..	..	..

Dairy Products.

One of the milk samples which did not comply was from a bulk consignment and contained 9 per cent. of added water. The other was deficient in fat.

TABLE 2.—SUMMARY FOR DAIRY PRODUCTS.

Product.	Total.	Number Not Complying.	Total 1972-73.	Number Not Complying in 1972-73.
Milk—				
Fresh	189	2	157	0
Powdered	0	0	1	0
Powdered Skim	2	0	2	0
Condensed	0	0	1	0
Butter	30	0	42	0
Cream—				
Fresh	7	0	17	0
Thickened	15	0	5	0
Sour	31	0	0	0
Cheese	38	1	37	2
Ice Cream, etc.	19	0	14	0
Yoghurt	9	0	11	1
Total	310	3	287	3

Fruit Products.

The skins of a large consignment of oranges imported from interstate were found to be illegally coloured with a synthetic dyestuff.

Only one fruit juice of nine tested was deficient in vitamin C.

Three instances of blown cans of fruit—tomatoes, tomato paste and strawberries—were noted. It would seem that there is a tendency for this type of product to be retained for too long a period prior to sale, since the shelf life is limited due to the action of fruit acids on the tinplate.

Food Contamination.

Although many of the instances reported to the Laboratory represented only minor adulteration, such as cocoa solids in milk and starch in soft drink, an unusually large number of particularly objectionable cases were noted, as shown in Table 3. Inadequate cleansing of returnable bottles used for milk and soft drink continued to be a problem. The steel split pin found wedged in the bottom of a bottle resulted in 230 and 0.5 parts per million of iron and chromium respectively in the soft drink which it contained.

The contaminated sample of meat represented a large stock which was affected by spillage in an adjacent chemical plant.

TABLE 3.—LIST OF EXTRANEOUS SUBSTANCES FOUND IN FOOD.

Food.						Foreign material.
Apple Juice	..	..	..	..	..	Pieces of newspaper and plastic, insect fragments
Beer	..	..	..	..	..	Mould
Bread	..	..	..	..	..	Charred starchy material
Bread	..	..	..	..	..	Carbonaceous material
Bread	..	..	..	..	..	Pieces of plastic
Bread	..	..	..	..	..	Mould
Breakfast Cereal	..	..	..	..	..	Grease
Ice Cream	..	..	..	..	..	Paraffin wax
Meat	..	..	..	..	..	Chlorinated phenol
Milk	..	..	..	..	..	Carbonaceous particles
Milk	..	..	..	..	..	Rodent excreta
Milk	..	..	..	..	..	Mould
Milk	..	..	..	..	..	Wash liquid
Milk	..	..	..	..	..	Cocoa solids
Milk	..	..	..	..	..	Dried paint
Milk	..	..	..	..	..	Snail
Milk	..	..	..	..	..	Grease
Rice	..	..	..	..	..	Weevil and weevil larva
Soft Drink (2 samples)	..	..	..	..	..	Oil
Soft Drink	..	..	..	..	..	Starch
Soft Drink	..	..	..	..	..	Mould
Soft Drink	..	..	..	..	..	Steel split pin
Steak and Vegetables (canned)	..	..	..	..	..	Mould
Tea (from two large consignments)	..	..	..	..	..	Mould
Tomatoes (canned)	..	..	..	..	..	Mould
Vinegar	..	..	..	..	..	Bacterial growth

Egg Pulp.

Regulations requiring the pasteurisation of liquid egg based on National Health and Medical Research Council recommendations came into operation in 1971. Five out of nine suspect samples taken by Departmental inspectors did not pass the prescribed test for adequate heat treatment.

Bread.

Seven of a total of 32 bread samples submitted under the Bread Industry Act failed to meet requirements. Most of these were allegedly milk bread but deficient in milk solids.

The Bread Industry Act was amended recently to enable adoption of the new National Health and Medical Research Council uniform standard in the Food and Drug Standards Regulations made under the Health Act. It can be expected that legal problems encountered in prosecuting for contravention of the bread standards will be largely overcome when the transfer of responsibility from the Department of Labour and Industry to the Department of Health is finalised.

Waters, Effluents and Trade Wastes.

The quantity and complexity of work in this field received in the laboratory under this heading increased.

As usual analysis of water samples was performed for a wide variety of reasons. Town supplies were examined specifically for nitrate and fluoride, a school supply for copper, mine waters for arsenic and cyanide and tank waters for metal contamination. Some samples were submitted for complete analysis to decide suitability for domestic purposes.

Some fifty odd waters from renal dialysis units were analysed ; these are forwarded to the laboratory from the Royal Melbourne and Austin Hospitals on a fairly regular basis.

Routine examination of effluents from sewage treatment works continued, some 560 samples being analysed.

Pesticides.

The pesticide residue results obtained for food samples taken during the past twelve months continued to be reassuringly low. Only one sample had a residue level in excess of the permissible amount, this was a sample of apples containing 1.5 p.p.m. arsenic ; appropriate action was taken.

Due to failure of the local tomato crops, much imported canned tomato produce was on sale in Victoria during 1974, twenty samples tested were all free of pesticides.

Samples from a large shipment of coconut waiting departmental clearance following fumigation were tested for bromide residues ; all were satisfactory.

Some water samples tested for the State Rivers and Water Supply Commission in connection with herbicide usage in catchment areas gave negligible results.

Miscellaneous.

Imported cast iron cooking ware was discovered to be coated with a resinous material, apparently applied for protection. After treatment by the supplier about half the resin still remained on these utensils.

Following concern expressed in the United States concerning possible migration of vinyl chloride into alcoholic beverages packaged in PVC containers, a number of spirits packed in plastic containers were examined for this compound. In only one case was vinyl chloride detected, in a proportion of 2 p.p.m. The levels found in the United States were of the order of 10 p.p.m., and it is considered that no problem exists here at present.

A survey of nitrate in vegetables and baby food was undertaken during the year, and other unusual samples examined included babies' rattles, a water colour set and toe thongs made from water buffalo hide.

FOOD STANDARDS COMMITTEE.

Once again the major matters considered by the Food Standards Committee were a number of proposed draft standards recommended by the National Health and Medical Research Council, on the advice of the Commonwealth Food Standards Committee, designed for uniform adoption throughout the States.

As well as many amendments to existing standards the Committee also had for consideration a draft standard for canned pineapple which was the first Codex Alimentarius Standard to be submitted to the States for comment. Such Standards are normally much more detailed than existing State Regulations. The standard for canned pineapple had been redrafted to the National Health and Medical Research Council format and been distributed to State Food Standards Committees to test their reaction to Codex Standards in general.

Also during the year discussions took place between the Health Department and the Department of Labour and Industry regarding the Standard for Flours, Meals and Bread. It was mutually agreed that it was more appropriate for this standard to be included in the Food and Drug Standards Regulations rather than in the Bread Industry Act.

PROPRIETARY MEDICINES ADVISORY COMMITTEE.

Four hundred and six applications for registration of preparations as proprietary medicines were received during the year, a decrease of some 20 per cent. compared to the previous two years which was attributed to uncertainty in the availability of raw materials, both packing materials and chemical ingredients.

The total number of applications received since the inception of the scheme is now 19,894 and of these 16,505 have been recommended for registration by the Committee.

The Committee met on 27 occasions to examine new applications for registration and 8 times to review registrations of more than 10 years standing ; 980 of this type of registration have now been examined.

One supplementary register containing 399 registered products, 195 deletions and 95 amendments to existing registrations was published during the year.

Some six companies exercised their right under Section 263 (4) of the *Health Act* 1958 and appeared before the Committee in support of applications for registration of preparations. The Committee also received a deputation from the Pharmacy Board to discuss problems to do with the labelling of products.

POISONS DIVISION.

Legislation.

The following legislation was introduced during the year :—

Poisons (Fees) Act 1973 No. 8456.

This Act increased by 50 per cent. the fees payable for the seven types of licences and permits issued by the Division.

Special Poisons (Levodopa) Regulations 1974.

These Regulations revoked the Special Poisons (Levodopa) Regulations 1972, thus obviating the need for separate permits pertaining to Levodopa to be issued to medical practitioners for individual prescribings to patients.

Metric Conversion (Poisons Act) Regulations 1974.

These Regulations metricated all weights, measures and distances in the *Poisons Act* 1962, in line with current Government policy.

Co-ordination of activities between States.

(a) Poisons Schedule Sub-Committee, National Health and Medical Research Council.

This Sub-Committee under the Chairmanship of Dr. E. Fitzsimmons, Medical Officer of the Commonwealth Department of Health includes representatives from the States and advises on the scheduling of numerous substances. It also attempts to promote and to maintain so far as possible a uniform list of scheduling from State to State.

Important subjects recently considered by the Sub-Committee include the responsibilities of sale of Potent Substances ; the labelling of analgesics and the possible scheduling of them ; first aid and safety directions for all hazardous materials ; and improved care in the labelling and packaging of poisons and deleterious substances and also non-edible substances in food containers.

(b) Control of Therapeutic Goods.

Officers of the Department attended further meetings of the National Therapeutic Goods Committee which was established under the Therapeutic Goods Act to recommend controls to Commonwealth and State Departments of Health in relation to therapeutic goods.

Advisory Committees have been established to prepare standards for therapeutic goods, testing methods, methods of assay and standards of purity.

A proposed set of regulations covering the advertising of therapeutic goods is being prepared for examination by State and Commonwealth Departments.

Regular inspections of premises of manufacturers and wholesalers of therapeutic goods were carried out conjointly by Pharmaceutical Officers of the Poisons Division and Officers of the National Biological Standards Laboratories. Appropriate recommendations were made to the companies concerned and follow-up procedures were adopted to ensure compliance with the Code of Good Manufacturing Practice.

(c) Monitoring of Illicit Drug Transactions.

The scrutiny of illicit movements of drugs of addiction made possible by the processing and analysis by the Commonwealth Department of Health computer of weekly returns of all transactions in drugs of addiction submitted by manufacturers and wholesalers, continued during the year. The method of "exception" reporting whereby the States are provided with information on authorized people receiving larger than normal amounts of drugs of addiction was refined to eliminate anomalies and provide better indications of long-term usage of drugs of addiction and possible abuse situations.

Professional and Technical Advice and Assistance.

Officers of the Poisons Division continued to provide advice to industry, the professions, and the public on all aspects of packaging, labelling, containers and regulations concerning the sale, distribution and use of Poisons and Deleterious Substances.

Members of the Division acted on committees reviewing standards for plastic poisons containers, and containers for poisons and poisonous substances ; and on a Committee promulgating new standards for items such as child-resistant closures and safety containers.

Drug and Health Education.

Professional officers of the Division gave a number of lectures and talks during the year on topics associated with drugs, poisons and therapeutic goods. Most of these talks, carried out in conjunction with the Health Education Centre, were given to community groups. The remainder dealing with more specific sections of the Poisons Legislation, were given to groups such as nurses, health inspectors and industry representatives.

Drug Recalls.

Twenty-two recalls of substandard therapeutic goods were instituted during the period under review—a decrease of nine on the previous year. Recalls were necessary for the following reasons—contaminated contents, failure to meet required standards of potency, or faulty labelling or packaging.

The decrease may be directly attributable to the stricter compliance with the Code of Good Manufacturing Practice during the manufacturing process and the consequential quality control procedures before the clearance of therapeutic goods for distribution. Appropriate follow-up investigations were made and recommendations formulated for dealing with and to prevent a re-occurrence of the incidents which had necessitated the recalls.

Destruction of Unwanted Drugs and Poisons.

A concerted effort was made by the Division to destroy all unwanted poisons or deleterious substances, particularly obsolete and unused drugs of addiction. More than 1,000 requests for disposal were received from doctors, pharmacists, schools, university departments, hospitals and industrial organisations compared to 200 the previous year.

Drug Security.

During the year there were 150 reports received of pharmaceutical premises being broken into and drugs of addiction stolen. This was a substantial increase over the previous year when pharmacy breakings decreased in number when compared with 1971-72.

The compulsion for pharmacists to install steel drug cabinets and the provision of methadone to drug-dependent persons may have been responsible for the previous decrease but the breakings have escalated due no doubt to unavailability of other sources of supply.

Officers of the Division made recommendations on security of pharmaceutical, medical and hospital premises in conjunction with officers of the Police Crime Prevention Bureau and security at manufacturing and wholesale establishments improved as a result.

Following the reporting of an increasing number of armed hold-ups for drugs of addiction, discussions were held with other interested bodies with a view to the prevention of such attacks.

The number of larcenies from doctors' cars declined during the year.

Illegal Obtaining of Drugs of Addiction.

Numerous reports of patients obtaining drugs of addiction by false pretences or by forging and uttering on prescriptions were received.

A program of information to prescribers concerning the method of operation of these people was instituted, as was a program of notifications where doctors' prescription pads were stolen. Prompt notifications to pharmaceutical organisations prevented numerous forged prescriptions being dispensed, and on occasions led to the arrest and conviction of those responsible.

Permits for Drugs of Addiction.

The number of permits issued to medical practitioners by the Chief Health Officer to prescribe Schedule Eight amphetamine drugs and other drugs of addiction for periods in excess of eight weeks continued at much the same level as in the previous two years. A total of 738 permits were issued compared with 714 and 720 in the two previous years.

Of this number, permits to prescribe drugs of addiction for long term treatment of medical conditions other than drug addiction again increased from 521 permits for 504 patients in 1972-73 to 596 permits for 548 patients this year. In 1971-72 388 permits were issued for 334 patients. Permits to prescribe Schedule Eight amphetamine drugs again decreased from 193 last year to 142 this year.

Licensing.

Administration of the licensing system under the Poisons Act continued during the year. The numbers of licences and permits currently in force are as follows :—

Licence to manufacture drugs of addiction	..	..	..	10
Licence to sell drugs of addiction by wholesale	..	..	..	10
Licence to manufacture poisons (other than drugs of addiction)	..	..	..	170
Licence to sell poisons by wholesale (other than drugs of addiction)	..	..	..	256
Educational, Advisory or Research Permits	..	..	..	205
General Dealers' Licences	..	..	..	209
Industrial Permits	..	..	..	1,096
Retail Licences	..	..	..	3,034
Hospital Authorities	..	..	..	294

POISONS INFORMATION CENTRE.

The number of inquiries received during the year was slightly less than during 1972.

The number of calls from the public decreased by 177 from 2,924 to 2,747 while the number from doctors and others associated with the medical profession fell by 162, from 1,647 to 1,485.

Once again the busiest period occurred in autumn and spring. The frequency of calls increased from January to April and fell again reaching the lowest point in August, the quietest month of the year, then rose to a second peak in November.

The following table illustrates the wide range of calls attended to by the Centre.

STATISTICS OF INQUIRIES RECEIVED AT POISONS INFORMATION CENTRE, 1973.

					<i>Total for Year.</i>
1. Salicylates, "Baby" and "Child"	..	..	..	..	21
Salicylates, "Adult"	..	..	..	..	58
Barbiturates and other "sleeping" medications	..	..	..	..	76
Laxatives	..	..	..	..	42
Cough medicines	..	..	..	..	104
Other internal and parenteral medications	..	..	..	..	1,034
<i>Sub-Total</i>	..	..	..	..	1,335

						Total for Year.
2.	Camphorated oil	..	..	..	..	10
	Mercurochrome ..	..	..	..	..	13
	Potassium permanganate ..	..	..	..	..	1
	Other external and topical medications	..	..	..	..	299
	Hair preparations	..	..	..	..	62
	Nail preparations	..	..	..	..	37
	Perfumes..	..	..	..	..	66
	Other cosmetics ..	..	..	..	..	87
	<i>Sub-Total</i>	..	..	..	..	<u>575</u>
3.	Bleaches ..	..	..	..	..	65
	Furniture polish ..	..	..	..	..	49
	Other disinfectants. Clean and polish agents, deodorants	..	..	..	..	638
	<i>Sub-Total</i> ..	..	..	..	..	<u>752</u>
4.	Kerosine	..	..	..	..	20
	Turpentine	..	..	..	..	78
	Other solvents and petroleum distillates	..	..	..	..	94
	<i>Sub-Total</i> ..	..	..	..	..	<u>192</u>
5.	Rodenticides	..	..	..	..	32
	Fly spray	..	..	..	..	38
	Naphthalene	..	..	..	..	37
	Other insecticides and related materials	..	..	..	..	128
	Weed killers	..	..	..	..	36
	Other pesticides	..	..	..	..	89
	<i>Sub-Total</i> ..	..	..	..	..	<u>360</u>
6.	Plants ..	..	..	..	..	<u>211</u>
7.	Bites and stings and their causes ..	..	..	..	..	<u>145</u>
8.	Adhesives	..	..	..	..	53
	Arts and crafts products	..	..	..	..	39
	Automotive products	..	..	..	..	18
	Candles ..	..	..	..	..	1
	Chalk ..	..	..	..	..	6
	Decorations	..	..	..	..	1
	Dyes ..	..	..	..	..	13
	Fertilizers	..	..	..	..	18
	Fluxes ..	..	..	..	..	1
	Inks ..	..	..	..	..	19
	Matches	..	..	..	..	12
	Novelty items	..	..	..	..	9
	Paints and allied substances	..	..	..	..	48
	Pet care ..	..	..	..	..	13
	Photographic products	..	..	..	..	9
	Pigments	..	..	..	..	7
	Possible causes of symptoms	..	..	..	..	10
	Rust control ..	..	..	..	..	1
	Other miscellaneous topics	..	..	..	..	384
	<i>Sub-Total</i> ..	..	..	..	..	<u>662</u>
	GRAND TOTAL	..	..	..	..	<u>4,232</u>

Annual Summary showing the source of inquiries, the average number of calls in office hours per day, an outline of the whereabouts and occupation of those inquirers associated with the medical profession and the proportion their calls formed of the total.

Year : 1973

No. of work days covered : 242

Total inquiries received : 4,232 i.e. 895 doctors

590 other professional

2,747 general public

Daily average : 17.49

Percentage Professional inquiries : 35.09

	Doctors.	Sisters.	Receptionists.	Pharmacists.	Others.
Interstate	5	2	..	..	..
Victorian Country	253	82	33	30	5
Royal Children's Hospital	76	10	..	..	6
Other Melbourne Hospitals	181	58	..	13	4
Surgeries	292	39	67	..	3
Clinics	57	36	19	..	..
Pharmacies .. .. .	..	..	..	107	..
Others	31	47	..	4	25
Totals	895	274	119	154	43

COMMUNITY WELFARE SERVICES.

Expansion in the community welfare field continued during the last twelve months and the staff establishment was augmented by the appointment of an Administrative Officer, a Senior Assistant Adviser and two Assistant Advisers.

The Senior Assistant Adviser is employed full-time in organising the extension of the Home Help Service to parents of mentally retarded persons. Each of the four Assistant Advisers has been allotted the responsibility of a section of the State and as their experience is developed, these officers should be of great assistance to municipalities and associated organisations in developing the existing welfare services and establishing new ones.

Welfare Officers.

There has been considerable interest on the part of Councils in the subsidies available towards the cost of employing Municipal Welfare Officers. Some municipalities are reluctant to appoint full-time welfare officers specifically for the aged as there are welfare needs for all age groups. However, under the *States Grants (Home Care) Act* 1969-1973, financial assistance is made available in respect of welfare officers on the clear understanding that such officers are employed by or in association with a senior citizens' centre. Under the same Act the Commonwealth Government provides financial assistance towards the establishment of elderly citizens' clubs and the employment of welfare officers is intended to promote these clubs and any associated services which may enable the aged to live independent lives in their own homes as long as possible.

Although there have been some excellent elderly citizens' clubs established in Victoria, many are not fully utilised and provide for only a small proportion of elderly citizens. As a result, the majority of the aged in the community are not members and many are unaware of existing services, thus the need for specially appointed officers to concentrate on the aged because the younger age groups are more able to provide for their own needs. In this regard the Commonwealth Government has increased the subsidy for the employment of welfare officers for the aged from half to two-thirds of the salary.

During the year subsidies were granted for the appointment of ten municipal welfare officers, two of whom are employed on a part-time basis and all except one spend some time on welfare for other age groups. These officers are employed by nine municipalities, with two Shires sharing the services of a part-time officer. The total number of welfare officers now subsidised is 26. The cost to the Commonwealth Government for the last financial year was \$59,164.

In some municipalities there has been a marked improvement in the services available for the aged. As this is not so noticeable in other areas, it is anticipated that welfare officers will have a better chance to assess local needs and in the near future many deficiencies in facilities and services for the aged will disappear.

Elderly Citizens' Clubs.

During the last twelve months 46 subsidies were granted by the Honorable the Minister of Health. These were in respect of the following :—

Capital—New Clubrooms	9
Capital for Extensions to existing Clubrooms	5
Maintenance subsidies—First Approval	10
Maintenance subsidies—Increased Amounts	22

There are now 237 subsidised clubs operating in 150 municipalities. Nine new clubrooms were completed during the last financial year.

The activities and services of the Department are detailed in comparison with last years' figures.

	1972-73	1973-74
Membership	36,427	34,685
<i>Hot Meal Services</i>		
Available at clubrooms through meals-on-wheels municipalities	93	62
Average number of meals weekly		
(a) at clubs	7,012	8,135
(b) through meals-on-wheels	17,459	19,292
Clubs providing handcrafts	43	46
Chiropody clubs	92	87
Number treated monthly	2,669	2,754
<i>Summary of Subsidy Details</i>		
Municipalities	145	150
Clubs	229	237
Capital and Maintenance	177	182
Maintenance only	34	39
	\$	\$
Government Expenditure Capital .. .. .	..	523,777
(a) Commonwealth	229,777	178,376
(b) State	136,795	104,584
Total Capital	366,572	282,960
Maintenance—State only	212,821	240,817
Balance of Capital Commitments		
(a) Commonwealth	272,212	228,106
(b) State	164,736	108,563
Total Capital	436,948	336,669

Home Help Services.

The principal development in the home help services field has been an extension to provide assistance to the parents of mentally retarded persons. As indicated in last year's report a pilot scheme of special home help assistance to families with mentally retarded children commenced in three municipalities. This service is now available to all municipalities wishing to take part.

As the total cost of the home help service scheme to mentally retarded persons is met fully by the State Government, municipalities responded quickly to the invitations to participate. All metropolitan and the majority of country municipalities have now agreed to the scheme in principle.

The extension provides for home helps to undertake a two week orientation course to familiarise themselves with the special requirements of mentally retarded persons and of the special skills parents must adopt in their daily care. The service is available to provide not only help with normal home duties but also with minding care at any time, morning, afternoons or evenings and at weekends thus allowing the parents some relief from their constant responsibility.

Home helps from 16 municipalities participated in the first two courses held in May and June and 23 municipalities submitted the names of home helps for subsequent courses. A total of nine home help organisers and 40 home helps have attended the orientation courses to date.

The increase in the number of householders assisted through the normal home help service continued during the year. However, due to the increasing cost to Councils on account of rises in salary, some municipalities tend to restrict the scope of the service because of the limit of subsidy. As an indication of this the number of eligible cases who applied for assistance in 1973 and could not be provided with home help was double the number of the previous year.

During the year three additional municipalities were granted subsidies to operate services.

Details of the home help service for the past two years are shown below :—

					1972-73	1973-74
Number of Councils granted subsidies ..	..	..	..	..	181	184
Total Services Operative ..	..	..	..	..	169	173
Number of householders assisted—						
(a) Aged and Infirm ..	..	..	..	..	9,150	10,663
(b) Young families ..	..	..	..	..	10,724	10,627
(c) Others ..	..	..	..	..	2,164	2,118
Total ..	..	..	..	..	22,038	23,408

Of the 10,663 elderly assisted last calendar year at the last quarterly returns :—

5,162 had received assistance for more than 3 months and

3,243 for more than 12 months

A comparison of the hours assistance given to the aged during the March quarter

1972—167,890

1973—204,636

The number of chronically assisted increased from 64 in the first quarter to 104 during the last quarter.

Eligible cases for whom no assistance available—46.

Home Help employed as at 31st December, 1973 :—

						1972-73	1973-74
(a) full time	..	..	..	..	..	225	165
(b) part time	..	..	..	..	..	679	614
(c) hourly	..	..	..	..	..	1,237	1,273
						<hr/>	<hr/>
						2,141	2,052
Number available to live in		..	..	..		58	34
Subsidies for private transport		..	..	..		181	129

Extension of Scheme to Mentally Retarded.

Municipalities presently participating	19
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Home Help Staff who have now undertaken Orientation Course

(a) Organisers	12
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(b) Home Helps	52
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Total hours assistance given	3,023 hours
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Cost to Government for year	\$2,952
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							1973-74
							\$
Total cost to Government for Home Help Services	1,247,889
Contribution from Commonwealth	369,756
Nett Cost to State ..	..	..	..	..	..	..	878,133

ENVIRONMENTAL HEALTH.

Radioactive Fallout.

As part of its continuing concern with environmental effects on the public health, the Department found it necessary to conduct tests for evidence of radioactive fallout from the 1973 French nuclear weapon tests at Muraroa Atoll in the South Pacific.

With the help of Professor D. G. Penington and the staff of the Department of Nuclear Medicine at St. Vincent's Hospital, Melbourne, it was possible to monitor the radioactive iodine fallout by measuring the activity of this isotope in calf and cow thyroid glands.

Whilst the results clearly showed that fresh ^{131}I was being deposited over dairying areas which would then enter the milk supply, the levels were such that the radiation doses to thyroids of young children, from this source, were of no significance as a hazard to health.

It is pointed out that atmospheric nuclear explosions in either the northern or southern hemisphere result in the fallout of long lived radio isotopes such as strontium 90 and caesium 137 and their effects on the community although very small are cumulative.

Heavy Metals in Fish.

The co-operative study on mercury in fish was extended to include other heavy metals in seafoods from Victorian waters and is still continuing. In general the presence of these metals in fish and crustacea has not been (directly) attributable to man made pollution.

Mercury Dipping of Seed Potato.

The practice of dipping seed potatoes in organic mercurial solutions to control *Rhizoctonia* was investigated for possible hazards to the agricultural worker and for possible environmental effects.

Some localized contamination was discovered, with in one case hazard to the farm's domestic water supply, and in another, heavy contamination of the kitchen vegetable garden. There was no evidence however of more distant environmental contamination from this source and potatoes grown from this seed were free of mercury.

Blood tests performed on the agricultural workers using this mercurial revealed no evidence of excessive mercury uptake.

Review of Licence Applications under Environment Protection Act.

With the commencement of the licensing provisions of the Environment Protection Act in 1973, 1,398 applications for a licence to discharge wastes to the environment were reviewed by the Commission.

No comment or objection was made to the Environment Protection Authority or delegated agency in 1,171 of these applications. Objections or recommendations were made on 170 applications in the terms of Section 20 (5) (a) of this Act and in the case of 13 the Commission objected to the granting of the licence in the terms of Section 20 (5) (b) of the Act where a danger to the public health was considered to exist. Of these 13, 9 involved the discharge of human or animal excreta to a source of water supply, 2 involved the discharge of human excreta to Port Phillip Bay adjacent to swimming areas and/or shellfish beds, one involved the discharge to a municipal drain of a toxic trade waste and one the discharge of human excreta to a cow pasture.

Water Re-use.

In 1973, the Assistant Chief Health Officer (Public Health) spent eight weeks as a member of an interdepartmental team investigating water re-use throughout the world and, in particular, its safety. A preliminary report was submitted to the Standing Committee on Water Supply and the final exhaustive report is close to finality. The Commission approved many applications to re-use waste water, subject to stringent conditions. During the next few years a lot of work will have to be undertaken by officers of the Department in the investigation of the safety of the increasing number of applications for the re-use of waste water.

The Assistant Chief Health Officer (Public Health) was seconded to the Standing Committee on Water Supply to act as Convenor of the Water Re-use Committee.

INDUSTRIAL HYGIENE DIVISION.

Cases of Occupational Disease.

One hundred and eighty-eight subjects were medically reviewed and assessed for occupational disease.

The following classification was made—

A. Pneumoconiosis	29
B. Asbestos-induced pleural plaques	1
C. Mesothelioma	7
D. Occupational asthma	4
E. Solvent intoxication	2
F. Occupational allergy	2
G. Cholinesterase inhibition by pesticides	3
H. Excessive lead absorption	74
I. No occupational disease	66
	<hr/>
	188
	<hr/>

The sub-classification of these headings is as follows :—

A. Pneumoconiosis								
Silicosis								
Possible	..	..	..	..	..	..	1	
Probable	..	..	..	..	..	..	3	
Certain	..	..	..	..	..	..	10	
Asbestosis								
Possible	..	..	..	..	..	..	3	
Probable	..	..	..	..	..	..	1	
Certain	..	..	..	..	..	..	7	
Siderosis	..	..	..	..	..	..	4	
B. Asbestos-induced pleural plaques		..	..	..	..	1		
C. Mesothelioma								
Pleural	..	..	..	..	..	5		
Peritoneal	..	..	..	..	..	1		
Combined pleuro-peritoneal	..	..	..	..	1			
D. Occupational Asthma								
Inhalation of Isocyanates	..	..	..	..	2			
Inhalation of Sulphurdioxide	..	..	..	1				
Polyamine flux paste additive	..	..	..	1				
E. Solvent intoxication								
Nitropropane	..	..	..	..	..	1		
Trichlorethylene	..	..	..	..	..	1		
F. Occupational Allergy								
Textile dyes	..	..	..	..	..	1		
Gum acacia	..	..	..	..	..	1		
G. Cholinesterase inhibition by pesticides								
Excess absorption without symptoms	..	..	..	1				
Clinically poisoned	..	..	..	..	2			
H. Excessive Lead Absorption and Lead Poisoning					..	..	74	

Screening (by urinary coproporphyrin estimation) of working populations exposed to lead yielded 74 individuals considered to have excessive occupational lead absorption. Amongst these 74 there were 54 episodes of lead absorption in which there was no clinical evidence of poisoning, and 48 episodes of lead absorption accompanied by symptoms which were generally mild but regarded by definition as indicating lead poisoning.

I. No occupational disease						
1. Obstructive airways disease	..	..	..	..	..	14
2. Diffuse lung disease	..	..	..	..	..	4
3. Congestive cardiac failure	..	..	..	..	..	3
4. Bronchogenic carcinoma	..	..	..	..	..	3
5. Old Pulmonary Tuberculosis	..	..	..	..	..	1
6. Sarcoid	..	..	..	..	..	1
7. Chronic rheumatic heart disease		..	..	..	..	1
8. Influenzal bronchitis	..	..	..	..	..	1
9. Acute pneumonitis	..	..	..	..	..	1
10. Pleurisy	..	..	..	..	..	1
11. Malingering	..	..	..	..	..	1
12. Anxiety reaction	..	..	..	..	..	10
13. No positive diagnosis	..	..	..	..	..	25
Total	..	..	..	..	..	66
GRAND TOTAL	..	..	..	..	..	188

Lead.

The Lead Workers (Medical Examination) Regulations 1973 became operative on the 3rd July, 1973.

During the year reports of 8,872 urinary coproporphyrin tests made under these Regulations, were received and of these a complete medical examination was required in 4,255 cases.

Seventy-four men were certified as showing signs of lead absorption to such a degree as to render it inadvisable for them to continue work in any occupation which exposes them to lead. Amongst these there were 219 attendances at the Division by persons for evaluation of their lead exposure.

The following list gives the total number of biochemical tests on persons to evaluate their lead exposure :—

Stipple cell counts	..	..	..	..	..	..	217
Urinary coproporphyrin determinations	..	..	..	..	..	..	697
Urinary lead	..	..	..	..	..	..	120
Blood lead	..	..	..	..	..	..	239
Haemoglobin	..	..	..	..	..	..	139
Haematocrit	..	..	..	..	..	..	93
Reticulocyte counts	..	..	..	..	..	..	14

Twenty lead-in-air analyses were performed in a battery factory where several cases of lead poisoning had occurred. These tests showed that the general factory environment was satisfactory and that the poisoning cases were a result of the cleaning of bag filters, a process which is only carried out every five years.

Three paint samples were analysed for lead content.

Fourteen items of china and cooking ware were tested for lead release, but only one, an antique copper kettle, was found to release excessive amounts of lead.

The survey of lead in teeth of the normal population was completed, teeth from 150 persons having been analysed.

Only 50 teeth from 37 retarded persons have been obtained in over two years and it has been decided that this rate of collection is far too slow to continue with the survey as originally planned. The small sample from retarded persons already tested shows no marked difference in lead content between the normal and the retarded group.

There were 54 episodes of lead absorption in which there was no clinical evidence of poisoning, and 48 episodes of lead absorption accompanied by symptoms which were certified as lead poisoning.

Radiation.

The number of licences issued to various sections of the community for the possession and use of irradiating apparatus and radioactive substances under the Irradiating Apparatus and Radioactive Substances Regulations for the year was as follows :—

Medical	..	..	..	..	..	..	396
Dental	..	..	..	..	..	..	352
Veterinary	..	..	..	..	..	..	109
Industrial	..	..	..	..	..	..	199
Chiropractic	..	..	..	..	..	..	85
Educational and Research	..	..	..	..	..	..	114
Government Bodies	..	..	..	..	..	..	65
Total	..	..	..	..	..	..	1,320

Medical Radiology can be further sub-divided as follows :—

Radiologists	..	..	..	..	..	..	50
X-ray Clinics	..	..	..	..	..	..	26
General Practitioners	..	..	..	..	..	..	199
Hospitals	..	..	..	..	..	..	121

The use of radioactive substances in medicine and research continues to increase.

The Australian Radiation Laboratory now regularly provides this Division with film badge reports from some 283 installations where people are exposed to ionizing radiation. The film badge reports indicate that the general level of radiation dose received by these people is well below permissible levels.

During the year the Division continued to provide a general radiation protection service. Some 30 radiation monitoring surveys of various types of installations were undertaken. X-ray protection designs were calculated for 7 establishments. The Division has arranged for appropriate disposal of a small number of radioactive sources. The low level radioactive waste disposal service for users of radiopharmaceuticals in medicine and research has continued to operate satisfactorily.

In consequence of the recent amendments to the National Health and Medical Research Council's "Code of Practice for Radiation Hygiene in Dentistry", the Division has undertaken a survey of dental x-ray units to ensure compliance with the Code. The amendments are primarily concerned with specifications for focal spot-skin distance and beam diameters. Approximately 35 dental units have so far been inspected and appropriate recommendations made. Negotiations with x-ray and dental supply houses have been undertaken to ensure that devices to modify existing equipment will be available.

An incident involving an excessive radiation dose causing a severe radiation burn to the fingers of an x-ray maintenance engineer was investigated. The investigation revealed that the overexposure was caused by the maintenance engineer working in close proximity to an x-ray tube, which he had inadvertently left energised. The incident illustrates the care that must be taken by maintenance workers to ensure radiation safety where normal shielding and other safety devices have been removed.

A small number of protection problems related to microwave and ultraviolet radiation were undertaken by the Division. Some 10 determinations of microwave leakage from domestic microwave ovens were made. Problems associated with the use of ultraviolet light were investigated on request.

Noise.

Noise level assessments in relation to noise induced deafness were undertaken in some 30 factories and appropriate recommendations made.

Audiometric examinations were carried out on some 32 employees working in noisy industries.

Information on noise-induced deafness and hearing conservation measures was provided on request.

The Division was represented on the National Health and Medical Research Council Sub-Committee on Hearing Conservation which produced the Draft Model Regulations for Hearing Conservation, accepted and recommended by the National Health and Medical Research Council.

Dust.

Gravimetric dust determinations	..	..	..	..	45
Free silica determinations	..	..	..	..	7
Asbestos in air determinations	..	..	..	..	4

Pesticides.

ARSENIC.

Twenty-six people were tested for suspected arsenic poisoning. This involved thirty-two analytical determinations. No cases of arsenical poisoning were detected.

METHYL BROMIDE.

Blood bromide determinations were carried out on twelve people, none of whom showed excessive exposure to methyl bromide.

Organo Phosphorus Compounds.

The estimation of blood cholinesterase levels in 86 people involved 109 analytical determinations. Nine cases of organo phosphorus poisoning were confirmed and two other people were shown to have depressed cholinesterase activity. Four cases of poisoning occurred at a pesticides formulating plant. These were due to accidents rather than usual procedures and further precautions are being taken to prevent such accidents occurring again.

Pest Control Operators Regulations 1972.

During the year the Commission granted registrations and issued licences as follows :—

Registration of firms	..	..	..	..	15
Class 1 Operators licence	..	..	..	..	0
Class 2 Operators licence	..	..	..	..	84
Class 3 Operators licence	..	..	..	..	6

A number of registrations and licences were cancelled as follows :—

Cancellation of firms registration	..	..	..	..	5
Cancellation of Class 1 Operators licence	..	..	..	..	0
Cancellation of Class 2 Operators licence	..	..	..	..	82
Cancellation of Class 3 Operators licence	..	..	..	..	12

Mercury.

Eighty-five people were tested for mercury absorption. Six people showed excessive absorption of mercury but did not show any symptoms of mercury poisoning.

The concentration of mercury vapour in the air was measured at nine places including seven educational institutions.

The Division's part in the collaborative study on the level of mercury in fish was completed in October 1973. Seventy-six samples of raw shark and other species of fish were analysed as well as eighty-five samples of cooked shark obtained from various fish shops in Melbourne.

The research project designed to check the body burden of methyl mercury which people in Victoria may have accumulated as a result of eating fish has been completed. The analytical work involved 372 analyses of total mercury in hair and 154 analyses of total mercury in blood. Thirty-eight of the blood samples and ten of the hair samples were analysed for inorganic mercury as well as total mercury.

Twenty-nine analyses of mercury in rat tissue were carried out to assist a research project in the Faculty of Medicine at Melbourne University.

Carbon Monoxide.

The survey into the effects of carbon monoxide from car exhausts on traffic policemen was completed and it was shown that there is no carbon monoxide hazard in these situations. Further work was completed on the estimation of blood carboxyhaemoglobin.

Two cases of severe carbon monoxide poisoning due to a blocked flue in a slow combustion stove were investigated.

Number of tests for carbon monoxide exposure :—

Carboxyhaemoglobin	..	..	..	63
Alveolar air carbon monoxide	..	..	..	55
Other air samples	..	..	..	22

A survey of possible hazards from carbon monoxide emanating from poorly tuned LPG fork-lift trucks in coolrooms and other confined spaces is continuing. Sixteen trucks were tested, of which only three were satisfactorily tuned by the National Health and Medical Research Council criteria at first inspection ; however of the remaining 13 only 2 were used in potentially hazardous situations, and in both these cases appropriate action has been taken.

General Chemicals.

Field monitoring equipment was used on a large number of occasions for the measurement of solvent vapours and other atmospheric contaminants.

An accurate method for the determination of benzene in air at levels in the vicinity of the maximum allowable concentration was developed and was used for measuring the atmospheric benzene concentration produced in furniture repair. The level obtained was well within the acceptable limit.

Recommendations were made to some 24 factories to reduce the atmospheric contamination of solvent or contaminant in the working environment, generally by means of local exhaust ventilation.

ENGINEERING DIVISION.

Sewerage.

New sewerage systems at Anglesea, Apollo Bay, Barwon Heads, Queenscliffe and Wonthaggi were completed or brought into partial operation during the year. Conventional treatment was employed at Anglesea and partial lagoon treatment at Wonthaggi, while the Barwon Heads, Queenscliffe and Apollo Bay systems discharge sewage to the ocean.

Construction of new schemes commenced at Cranbourne, Lakes Entrance, Pakenham and Rainbow.

New Sewerage Authorities were constituted for the towns of Heyfield, Hurstbridge and Riddels Creek and new schemes were approved at Creswick, Portarlington—St. Leonards—Indented Heads, Nagambie, Strathmerton and Winchelsea.

There are now 117 Sewerage Authorities constituted in Victoria under the Sewerage Districts Act and 94 of these have systems in operation.

One hundred and fifty-three inspections of sewage treatment works were made during the year and samples were taken for analysis at the Health Laboratories. The Sewerage Authorities were advised of the test results and comment was made on the operation and effectiveness of treatment.

No applications for the establishment of nightsoil depots were received during the year, indicating the trend towards the adoption of full sewerage.

Septic Tank Installations.

Plans for 207 new installations and 16 alterations to existing systems were examined. A total of 502 septic tank systems were inspected.

Plans and specifications were approved for one mass septic tank scheme at Penshurst.

Offensive Trades and Garbage Depots.

Plans of four new abattoirs and extensions to 17 existing abattoirs were examined and approved.

Sites for 21 new garbage depots were inspected.

Stream Pollution and Drainage.

Thirty-five inspections were made during the year in connection with drainage complaints, stream pollution and trade-waste discharges.

Water Supply.

Fifty-six town water supply systems were inspected to examine treatment methods and assess water quality. Chlorination of supplies was recommended in a number of cases.

Swimming Pools.

Eighty-six inspections of public swimming pools were made. Fifty-six samples of water were taken for bacteriological examination from pools temporarily exempt from certain provisions of the Swimming Pool (Water Purification) Regulations.

Lectures were given by officers of the Department at the Swimming Pool Superintendents' Training Course conducted by the Footscray Institute of Technology.

Sewerage Services in New Land Sub-divisions.

The *Local Government (Sub-division of Land) Act 1973* now proclaimed requires that plans of sub-divisions of land outside the area under the control of the Melbourne and Metropolitan Board of Works shall be referred to the State Rivers and Water Supply Commission and the relevant local Sewerage Authority before sealing by a Municipal Council. The Water Commission and the Sewerage Authority may require the provision by the Sub-divisor of sewerage facilities to serve the area.

The Sewerage Authority or in some cases the Council then becomes the responsible authority to construct and administer the system. The capital cost is met by the Sub-divisor and charges are levied usually by rating the land to cover the operation and maintenance of the system.

This Act should go a long way towards obviating the unsatisfactory conditions in areas where housing and industrial development has occurred without proper sewerage facilities being provided.

Building Surveying.

Plans and specifications were examined and approval given for some 1,019 public buildings, as shown in the following table :—

PLANS EXAMINED.

Class of building.	Sketch plans for approval in principle.	Working drawings for approval.	Electrical installations.	Mechanical ventilation installations.	Totals.
Institutions .. .. .	..	..	..	..	..
Public Buildings (under Public Building Regulations) ..	28	369	578	53	1,028
Tertiary Education Buildings	1	44	30	28	103
Schools	7	180	235	41	463
Pre-schools and Infant Welfare Centres	59	106	78	17	260
Amusement Structures/Tents	3	46	2	..	51
Child Minding Centres	2	72	72	9	155
Mentally Retarded Centres	9	20	3	5	37
Elderly Citizens' Clubs	33	22	17	7	79
Exhibitions/Seating Plans .. .. .	..	18	..	..	18
Totals	142	877	1,015	160	2,194

There were 6,362 inspections of public buildings during the year and 95 of these inspections were made at night during public occupation of the buildings.

Forty-six new Certificates of Safety for Amusement Park Structures were issued, 323 were renewed and 18 transferred.

Thirty-three new Child Minding Centres were registered ; registration was renewed for 293 and there were 16 transfers of registration.

Land Waste Management Section.

This new Section was established to administer the powers and functions recently delegated to the Commission of Public Health by the Environment Protection Authority for the issue of licences for the transport of wastes and also for the discharge of wastes, both liquid and solid, to land.

The total number of applications for licences received during the year was 962. Site inspections made numbered 440 and a total of 506 licences issued.

Close liaison was maintained with other authorities during investigations, including the Department of Mines, other delegated Protection Agencies, the Environment Protection Authority itself and local Municipal Councils.

The Commission was represented at the appeals heard by the Environment Protection Authority Appeals Tribunal and also the Appeals Board against the issue of licences in two cases.

Specialist advice was given in respect of the satisfactory disposal of wastes difficult to handle or treat.

Beef Cattle Feedlots.

A brief study tour by the Department's Chief Engineer was undertaken late last year at the direction of the Minister of Health to investigate current practice in the United States in relation to the beef cattle feedlot industry.

All aspects were examined, including design and layout, wastes management and disposal as affecting soil and groundwater, and in particular the legislative means of control of the industry for protection of the environment.

A working arrangement has now been established between the Commission of Public Health and the Environment Protection Authority for beef cattle feedlots to be controlled under the Environment Protection Authority licensing system. Guidelines and appropriate standards for siting feedlots, waste retention and disposal facilities and general operation of these undertakings are about to be finalised.

GENERAL ITEMS.

Health Education Centre.

During 1973, speakers from the Department were requested to assist in the cancer education programme of the Anti Cancer Council of Victoria by addressing the students of two secondary schools on smoking and two women's groups on cancer of the breast and cervix uteri.

In addition, all talks which are organised by the Health Education Centre as part of the National Drug Education Programme do include the effects of smoking on health (particularly in relation to lung cancer).

Close contact has been maintained between the Anti Cancer Council of Victoria and the Chief Health Education Officer and the Senior Health Education Officer, and Health Education staff and representatives of the Anti Cancer Council have participated jointly in a number of seminars.

The Health Education Centre has assisted in bringing material on smoking suitable for primary schools prepared by the Anti Cancer Council of Victoria to the notice of teachers during 1973 and 1974.

The Health Education Centre has continued to distribute a number of the Anti Cancer Council's publications.

Civil Defence.

Again it is pleasing to report that no grave emergency occurred although the floods in northern Victoria during the autumn presented some difficulties. Departmental involvement was minimal and involved assistance and advice to local municipal officers. Some problems with water supplies were overcome by prompt action and advice was often sought of and given concerning the disposal of wastes.

On the organisational side, steps were taken to establish a functional Disaster Medical Service. A Committee representing the State and Commonwealth Departments of Health, the Australian Medical Association (Victorian Branch) and the Hospital and Charities Commission was formed and held its first meeting during the year. Basic plans of the organisation were drawn up for discussion with the Commonwealth Department of Health and the Victorian Civil Defence Co-ordinator. However, progress has been slow, due to the necessity of ensuring co-ordination with other plans and the fact that planning can only be carried out during normal office hours.

Prison Medical Service.

The medical services for the various prisons in Victoria continue to be maintained by the General Health Branch. At Pentridge Prison a medical service is provided by two doctors who are employed during normal working hours. After-hour service is provided by a local group of general practitioners on a fee-for-service basis. At Pentridge Prison and visiting the Country prisons, a consultant psychiatric service is provided by the Mental Health Authority. An X-ray plant is in operation at Pentridge for one half-day each week. This has proved of great value, allowing prisoners to have x-rays taken in the Prison and not being referred to the Royal Melbourne Hospital under escort.

In the country prisons and youth training centres, with the exception of Langi Kal Kal and McLeod Prison, medical services are provided by local general practitioners. At Langi Kal Kal a registrar from the Ballarat Base Hospital visits the prison regularly. At McLeod Prison (French Island) a medical officer of the General Health Branch visits the prison each month and urgent cases are referred to the doctor in Lang Lang.

Special Health Services.

On the 27th June, 1973, the Minister for Aboriginal Affairs announced the transfer of the Ministry's nursing team to the State Department of Health. This change was in line with the Ministry's policy that services provided for aborigines should be made available wherever possible, through the community's existing resources. To facilitate the work of the nursing team, the Health Department has established a Special Health Services Section ; it is staffed by a medical officer, an administrative assistant, a senior sister and four visiting nurses. Primarily the Section is concerned with improving the health of aborigines in Victoria through relevant health education projects ; these emphasize the need for better communication, through greater understanding of current health attitudes and practices, between those groups offering health services and those who are expected to use them.

Liaison has been continued with the Ministry of Aboriginal Affairs and the medical officer and nursing staff attended the Ministry's staff training camp at Rubicon in June, 1974. Discussions have also taken place with personnel of the health services in areas where the visiting nurses are working, including General Practitioners, Welfare Officers and hospital personnel. The nurses visit families who have particular health problems, and are developing health education projects in their districts. Contact has also been established with aboriginal organisations and with the staff of the Aboriginal Medical Services in Fitzroy and in Bairnsdale. Combined training programmes for field staff are planned, with the assistance of the Department of Social and Preventive Medicine and the Centre for Aboriginal Research, Monash University.

The nurses visit West Gippsland, East Gippsland, the Goulburn Valley and the Mallee. The Senior Sister is working in the Metropolitan area as well as supervising the nurses in their districts.

During the coming year plans will be developed for the training of Aboriginal Health Workers whose assistance will be invaluable in field work and in health education programmes.

Special Accommodation Houses.

The *Health (Special Accommodation Houses) Act* 1973 received Royal Assent on the 1st May, 1974, and the regulations made thereunder are about to be finalised.

The effect of this legislation will be that the Commission will assume responsibility for the registration and administration of those boarding houses providing accommodation for aged and incapacitated persons whereas such premises were formerly handled by municipal councils.

The new regulations will contain a number of important requirements considered essential for the safety of persons resident in special accommodation houses.

Pest and Rodent Control.

As in previous years pest and rodent control continued at a satisfactory level. Assistance and advice was given to the Melbourne Harbour Trust personnel engaged in rodent control on the wharf areas. Field inspections were also carried out by the Pest Control Officer of the Department and recommendations given where and when required.

Rat Infestation on the Waterfront.

Rat infestation on the wharves is still at a low level and no complaints of infestation were received during the year despite the large amount of demolition of buildings and re-construction of shipping berths.

Rat Infestation in the State.

Following complaints of rat infestation, several inspections were carried out during the year in various municipalities with a view to recommending economical and practical control measures. Following the recent "flash floods" in the western suburbs there was a sudden influx of enquiries and complaints. However with advice from the Department and the aid provided by Municipal Councils, the complaints were satisfactorily resolved.

General Pest Control.

Investigations carried out in regard to general pests were as follows :—

Inspections of several poultry farms concerning rat control and fly breeding ;
 A plague of blowflies at a High School ;
 Red-Back spiders at a Child Minding Centre ;
 Cockroaches infesting a High School ;
 Insects in stored grain and cereal products ;
 Mosquitoes breeding in storm water drains ;
 Mice in Primary Schools ;
 Weevils in cereal products ;
 Moth infestation in dried fruits ; and
 Inspection of railway residences for mice infestation prior to demolition.

Items of Special Interest.

During October, 1973, an inspection of Lake Hindmarsh at Jeparit was carried out following a request from the local Council for information on methods of controlling sand flies, bush flies and mosquitoes.

The lake is approximately 40–50 miles in circumference and has a surface area of approximately 32,000 acres.

A report was subsequently submitted recommending :—

- (a) Areas to be treated ;
- (b) Suitable insecticides to be used ; and
- (c) Methods and rates of application.

A similar survey was carried out at Swan Hill and Kerang in November, 1973. This consisted of inspection of both municipalities including river banks, swamps and lagoons. An aerial survey was undertaken to assess the extent of the flood waters and the accessibility to that water for aerial insecticidal spraying to control mosquito breeding if and when required.

A subsequent report outlining methods of treatment and recommended chemicals etc. was submitted for referral to the Councils concerned.

Liaison with Commonwealth and State Government Departments and municipalities continues at a satisfactory level.

Liquor Inspection.

Premises Inspected :

Hotels	..	..	..	..	..	..	..	402
Licensed Grocers	..	..	..	..	..	..	..	54
Sporting Arenas (Visits)	..	..	..	..	..	..	..	8
Bottling Establishments (Visits)	..	..	..	..	..	..	..	59
Aerodromes (Visits)	..	..	..	..	..	..	..	2
Licensed Restaurants	..	..	..	..	..	..	..	6
								<hr/> 531 <hr/>

Of the 402 hotels visited, eight did not have a denaturing substance in the drip trays as required by the Cleanliness (Food, Drugs and Substances) Regulations. The licensees were warned of the offence and follow up inspections were made.

Three licensed grocers were detected using incorrectly worded labels on wine that did not comply with the requirements of the Food and Drugs Standard Regulations. Labels were altered to comply with the regulations.

One licensed grocer was found to be selling his own brand of wine without labels. Sales were halted until correct labels were applied.

Visits and inspections at sporting arenas showed that the standard of cleanliness and glass washing was satisfactory. All spirits and beer tested were satisfactory.

Visits to bottling establishments involved the taking of samples of spirits and fortified wines in P.V.C. containers for analysis to assess the effect of possible contamination to the contents from the container. Results of analyses showed no dangerous levels of contamination, but further tests are to be made at a later date.

One supplier of bulk claret (5 gallon containers) was found to have supplied another bottler with dirty containers and wine which was unpalatable. The wine was disposed of and the containers thoroughly cleansed.

One sealed bottle of imported champagne was reported with flies in the bottle. Investigations showed that the company importing the champagne had gone into liquidation and the nominee had disappeared.

Samples of "Gold Wasser" were obtained from wholesale spirit merchants who distribute the drink in Victoria. "Gold Wasser" is a spirit with flecks of gold added which is contrary to the requirements of the Foods and Drugs Standards Regulations. A recommendation was made to the Foods and Drugs Standards Committee that the regulations be amended to permit the sale of "Gold Wasser".

Opened bottles of spirits tested at above premises :—

Scotch Whisky	1,150
Australian Whisky	905
Imported Gin	162
Australian Gin	397
Imported Brandy.. .. .	41
Australian Brandy	636
Imported Rum	215
Australian Rum	307
Schnapps	15
Vodka	211
Ouzo	32
Arak	15
Total	4,086

Of these the following were found to be adulterated :—

Scotch Whisky	18
Australian Whisky	3
Imported Gin	3
Australian Gin	1
Australian Brandy	1
Imported Rum	3
Australian Rum	3
Vodka	2
Total	34

Testing of draught beer was carried out at all hotels visited for spirit testing, namely 402. No cases of adulteration were found.

A prosecution taken under the Consumer Protection Act for adulterated Scotch Whisky was successful.

Free Travel for Pensioners and Persons of Similar Limited Means.

During the year 29,186 applications were received, a reduction of 2,193 compared to the previous year. 183 applications were rejected as the persons concerned failed to comply as "persons of similar means to a pensioner", the method of travel proposed was other than State owned or they were not attending approved institutions.

Refunds were granted to 55 applicants, most of whom were summoned to hospital at short notice and did not have sufficient time in which to apply for free travel.

The expenditure on free travel was \$149,955 for the year, an increase of \$7,010 over the previous year.

Cemeteries.

There are now 757 public cemeteries and private burial grounds in Victoria. During the year a private burial ground was established at Pallotti College, Millgrove.

Negotiations are in course with State Treasury for a loan of \$10,000 to the trustees of the Colac Public Cemetery to enable the development of a new lawn cemetery. Maintenance grants totalling \$14,000 were made to a number of cemeteries with insufficient income to provide for normal maintenance.

Eighteen medical practitioners were licensed by the Honorable the Minister to sign Confirmatory Cremation Certificates, bringing the total to 338 of doctors currently licensed for this purpose.

TRAINING OF HEALTH INSPECTORS.

ROYAL SOCIETY OF HEALTH, VICTORIA BOARD OF EXAMINERS.

1973 *Final Examinations.*

Twenty candidates successfully completed their training after passing the final examinations in 1973. These candidates were recommended to the Royal Society of Health, London, for the Diploma of Public Health Inspection.

There are 26 candidates undertaking the final year of the Course in 1974.

Diploma Course.

The Commission of Public Health on the 4th September, 1973, resolved that the recommendation of the Victoria Board of Examiners in respect to the establishment of a full-time diploma course for the training of Health Inspectors be adopted provided that a representative of both the Municipal Association and the Local Government Department be appointed to the Committee to be established to investigate the feasibility of such a course.

Preliminary discussions took place with the Victoria Institute of Colleges and it is anticipated that a full time diploma course will start in 1976.

Meat Inspector's Examinations.

In October the annual examination for the Commission's Certificate of Competency as a Meat Inspector was conducted at the Pharmacy College and the William Angliss College of Catering and Food Studies. One hundred and forty-two candidates sat for the examination. Of these 69 were students of the William Angliss College of Catering and Food Studies, 26 were students of the Bendigo Institute of Technology, 12 were students of the Centre for Continuing Education, Wangaratta, 27 were students of the Gordon Institute of Technology, Geelong, and 8 were students who had attended one of the special full-time courses of study for meat inspection arranged by the Department of Primary Industry in conjunction with the William Angliss College of Catering and Food Studies.

Sixty-five candidates passed the examination which is the highest number ever to do so. The second highest number was in 1972 when 60 out of 151 passed.

Also during the year an examination was held for students engaged in the special Department of Primary Industry full-time course held during the months of June-July-August-September, 1973. Of the 34 candidates who entered for this examination 32 passed which represents a pass rate of 94 per cent. which is an excellent result.

In future the Meat Inspectors' examinations will be conducted by the Department of Agriculture.

LEGISLATION.

During the year Royal Assent was given to the following Acts :—

The *Health (Fluoridation) Act* 1973, which enables the Commission to require the fluoridation of any public water supply under its control for dental health purposes and to control the operation of any water supply authority in relation to the fluoridation of its public water supply.

The *Health (Special Accommodation Houses) Act* 1973, which amends the *Health Act* 1958 to provide for the approval and registration with the Commission of all premises throughout Victoria, which are used as boarding houses providing accommodation for persons over 60 years of age or who are physically handicapped to the extent that their ability is significantly impaired.

In addition to the Regulations referred to elsewhere in this report the following were approved :—

Irradiating Apparatus and Radio-Active Substances (Amendment) Regulations 1973 and 1974.

These amendments provided for an increase in the licence fees payable for the possession and use of radio-active substances and irradiating apparatus ; the exemption from payment of licence fees in the cases of Government departments, public hospitals and certain educational institutions ; the exemption of television receivers from these regulations where the radiation from them is of a sufficiently low level.

Household Insecticides Regulations 1974.

The 1966 Regulations were consolidated and brought up to date for the more effective control of the use of household insecticides.

Entry Into Confined Spaces (Amendment) Regulations 1974.

The definition of " Confined Space " was widened to include enclosed underground conduits under construction or maintenance by the Melbourne and Metropolitan Board of Works.

ACKNOWLEDGEMENT.

In the protection of the health of the public, it is recognised that many statutory authorities and instrumentalities have both a direct and indirect responsibility and it is essential that these responsibilities be recognised and understood.

The Commission is pleased to place on record the excellent co-operation and understanding that has been shown in Victoria during the past year by those whose activities have contributed to maintaining and promoting the health of the people. In particular the Commission records its appreciation of the activities of municipal councils and their staff in the administration of their responsibilities under the Health Act.

Respectfully submitted,

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} Members of the Commission.

A. T. GARDNER, Secretary,

